Essays on Determinants of Accounting Conservatism

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ABSTRACT

This study consists of two essays. Using a dataset from 38 economies, the first essay examines the association between product market competition and accounting conservatism as well as whether this association varies with legal institutions and product market competition. In addition, I also investigate whether product market competition affects the positive association between legal institutions and accounting conservatism documented by prior studies. I find that: (1) product market competition is *positively* associated with accounting conservatism; (2) the positive association between product market competition and accounting conservatism is *significantly stronger* in countries with better legal institutions; (3) the positive association between product market competition and accounting conservatism *only exists* in competitive industries; (4) the positive association between legal institutions and accounting conservatism documented by prior literature *only exists* in competitive industries. My empirical findings suggest that product market competition could drive managers to adopt conservative accounting. Moreover, this study indicates that legal institutions and product market competition are important for each other to function well. This study contributes to the literature on country- and industry-level determinants of accounting conservatism and stresses the important governance role of product market competition.

In the second essay, I examine the association between ownership structure and accounting conservatism as well as how legal institutions influence this association. Using a comprehensive, firm-level ownership dataset for thirteen Western European countries to conduct the empirical analysis, I find that: (1) both wedge between control rights and cash-flow rights and dispersion of cash-flow rights across multiple large owners are positively associated with accounting conservatism; (2) legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism. This study contributes to the literature in a number of ways. Firstly, it adds to the growing body of literature on the role of accounting conservatism in mitigating agency problems. Secondly, this study highlights the importance of the second largest controlling shareholder in affecting the level of accounting conservatism. Thirdly, this essay reinforces the important role played by legal institutions in influencing the installation of firm-level corporate governance mechanisms.

Keywords: Legal Institutions; Product Market Competition; Ownership structure; Accounting Conservatism

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1.1 Introduction

Product market competition has long been regarded as an important industry-level governance mechanism in economics literature (Hicks 1935, Jensen 1993, Smith 1776). Although a great number of prior studies investigate how country- and firm-level corporate governance determines accounting conservatism (Ahmed and Duellman 2007, Ball, Kothari and Robin 2000, Ball, Robin and Wu 2003, Bushman and Piotroski 2006, Lafond and Roychowdhury 2008), few study investigates how product market competition, one of the most important industry-level governance mechanisms, influence accounting conservatism. Moreover, we also know little about how product market competition and legal institutions interplay in determining accounting conservatism. This paper attempts to investigate these important issues. Specifically, I examine four research questions. Firstly, how does product market competition affect accounting conservatism? Secondly, do the impacts of product market competition on accounting conservatism vary with legal institutions? Thirdly, whether the association between product market competition and accounting conservatism is nonmonotonic? Finally, how does product market competition affect the relation between legal institutions and accounting conservatism?

Literature on the determinants of accounting conservatism primarily focuses on firm- and country-level factors while pays little attention to industry-level ones, such as product market competition. In this paper, I argue that product market competition could affect accounting conservatism in several different ways. Firstly, more intense product market competition is related to lower profitability, greater performance volatility and higher

liquidation risk, resulting in a firm's higher demand for accounting conservatism to achieve more efficient contracting. Secondly, product market competition could affect the strategy of corporate disclosure, and thus impact on the recognition timeliness of both good news and bad news. Several studies predict that firms have incentives to report negative proprietary news and withhold positive news in an attempt to dissuade potential entrants (Darrough and Stoughton 1990, Evans and Sridhar 2002, Feltham and Xie 1992, Wagenhofer 1990) or to selectively communicate strategic information to existing rivals (Clinch and Verrecchia 1997, Darrough 1993), indicating firms will apply accounting conservatism to mitigate competitive pressure in product markets. An alternative viewpoint is that product market competition reduces the severity of agency problem, and thus lowers the demand for accounting conservatism. I'll empirically test the competing viewpoints on the association between product market competition and accounting conservatism. Overall, I predict that the association between product market competition and accounting conservatism is positive.

Legal institutions could impact on the relationship between product market competition and accounting conservatism through the following ways. On the one hand, more intense product market competition is related to higher liquidation risk, resulting in a firm's higher demand for accounting conservatism to achieve more efficient contracting. Prior studies show that investors are more likely to choose liquidation when legal institutions are stronger (Claessens and Klapper 2005, Djankov, Hart, Nenova and Shleifer 2006), leading to an even higher liquidation risk for firms in competitive industries of these countries. Therefore, in better legal institutions, the association between product market competition and liquidation risk is more pronounced, further boosting the positive association between product market competition and accounting conservatism. On the other

hand, well-functioning legal institutions help increase the flow of firm-specific information (DeFond, Hung and Trezevant 2007, Morck, Yeung and Yu 2000), making the positive association between product market competition and accounting conservatism even more pronounced. However, it is also possible that legal institutions could protect investors and lower the investors' demand for conservative accounting to mitigate their concern on liquidation risk or liquidation cost triggered by product market competition. In this case, legal institutions might weaken the positive association between product market competition and accounting conservatism. In sum, I predict that legal institutions strengthen the positive association between product market competition and accounting conservatism.

Nevertheless, the impacts of product market competition on accounting conservatism might vary with legal institutions simply because the association between product market competition and accounting conservatism is nonmonotonic. For example, suppose the association between product market competition and accounting conservatism is less pronounced when industry is concentrated (assume here industries are classified into either competitive or concentrated). If strong legal institutions are dominated by competitive industries while weak legal institutions by concentrated industries, then the association between product market competition is expected to be more pronounced in strong legal institutions. Here, the impacts of legal institutions on the association between product market competition and accounting conservatism might come from the nonmonotonic impacts of legal institutions, rather than the reasons I discussed above. To assuage this concern and further explore the association between product market competition and accounting conservatism and the effects of legal institutions, I separate the full sample into

three groups[1] and then regress Basu's (1997) model in each group with important firm- and country-level variables controlled. The method of running regressions in different subsamples enables me to reveal nonmonotonic relations in case that they do exist[2].

Finally, since previous literature shows that competitive industries are distinctive from concentrated industries (Giroud and Mueller 2009, MacKay and Phillips 2005), the association between legal institutions and accounting conservatism might be influenced by the extent of product market competition. However, prior international studies which propose a positive association between legal institutions and accounting conservatism generally neglect the potential influences from product market competition (Ball, et al. 2000, Ball, et al. 2003, Bushman and Piotroski 2006). In this paper, I argue that intense (low) product market competition could increase (decrease) the demand of contracting parties for accounting conservatism, enhance (lower) the litigation costs endured by the firm, and weaken (strengthen) the firm's political influences, leading to a more (less) pronounced association between legal institutions and accounting conservatism. Based on the above discussion, I predict that the positive association between legal institutions and accounting conservatism is more pronounced in competitive industries.

Following Basu (1997), I use asymmetric timeliness of economic loss recognition to proxy for accounting conservatism. The extent of product market competition is measured as negative one multiplied by Herfindahl-Hirschman Index (hereafter, *HHI*), which is the sum of the squared market shares of the firms competing in each industry-country sample. To calculate *HHI*, I get the sales data of both public firms and private firms from the *Bureau van Dijk* (*BvD*) *Orbis*. I use 8,190,848 observations (1,490,106 public and private

[1] I separate the full sample into three groups according to the industry classification scheme used by the U.S. Department of Justice and Federal Trade Commission (1997): G1 – competitive industries (*HHI*<0.1), G2 – moderately concentrated industries (0.1<=*HHI*<0.18), and G3 – highly concentrated industries (*HHI*>=0.18).

[2] This methodology is similar to the one applied in Giroud and Mueller (2009).

companies, from 1999-2007) around the world to calculate *HHI*, which would more accurately reflect the extent of product market competition than ratios constructed using data only from *Global Vantage*, which is comprised almost entirely of publicly-traded firms (Ali, Klasa and Yeung 2005). Legal institutions (*LI*) examined in this paper include security regulation (*SECREG*), public enforcement (*PUBLENF*), investor protection (*INVPRO*), and rule of law (*RULE*). Using a sample of 84,835 observations from 38 economies spanning from 1999 to 2007, I find that: (1) product market competition is positively associated with accounting conservatism; (2) the positive association between product market competition and accounting conservatism is *significantly stronger* in countries with better legal institutions; (3) the positive association between product market competition and accounting conservatism *only exists* in competitive industries; (4) the positive association between legal institutions and accounting conservatism documented by prior literature *only exists* in competitive industries.

This study contributes to the literature in a number of ways. Firstly, this study adds to the research on determinants of accounting conservatism. Prior studies generally focus on country- and firm-level determinants of accounting conservatism, while this study investigate how product market competition, and important industry-level factor, affect accounting conservatism. My results report a positive association between product market competition and accounting conservatism, indicating that product market competition could drive managers to adopt accounting conservatism.

Secondly, to my knowledge, this paper is the first empirical study to provide evidence on how the association between product market competition and accounting conservatism varies with legal institutions. In the empirical analysis, I find that the positive association between product market competition and accounting conservatism generally exist in strong

legal institutions. This finding is consistent with the view that legal institutions strengthen the positive association between product market competition and accounting conservatism and suggests that legal institutions are important for product market competition to function well.

Thirdly, as far as I am aware, this study is the first one to reveal the nonmonotonic association between product market competition and accounting conservatism. By decomposing the full sample into different groups according to product market competition intensity, I find that the positive association between product market competition and accounting conservatism only exists in competitive industries, supporting a nonmonotonic correlation between product market competition and accounting conservatism.

Fourthly, it adds to the literature on the role of legal institutions in shaping accounting conservatism. By introducing product market competition as an important industry-level corporate governance mechanism, I find that only in competitive industries can legal institutions positively impact conservatism. This finding suggests that product market competition could affect the function of legal institutions. When industry is concentrated, legal institutions function limitedly in driving managers to act properly. The results deepen existing understanding of the determinants of accounting conservatism and extend prior studies, such as Bushman and Piotroski (2006), Ball et al. (2000) and Ball et al. (2003).

Finally, this study complements the concurrent and independent research by Dhaliwal et al. (2008). Their study also finds that product market competition is positively associated with accounting conservatism, consistent with the findings of my paper. However, the empirical evidences of Dhaliwal et al. (2008) are from the U.S., a country dominated by competitive industries and equipped with the best legal institutions in the world. This specific U.S. setting might restrain us from understanding another two important research

questions: (1) how the association between product market competition and accounting conservatism varies with legal institutions; and (2) whether such association is monotonic? In contrast, using an international dataset, my study provides a more complete understanding on the association between product market competition and accounting conservatism.

The remainder of this essay is organized as follows. Section 1.2 describes the conceptual framework of this essay, including discussions of the research questions and predictions. Section 1.3 describes the data and research design. Section 1.4 presents the summary statistics. Section 1.5 presents my empirical findings. Robustness checks are discussed in Section 1.6. Section 1.7 summarizes and concludes. Appendix 1-A includes a description of all empirical variables and their sources.

1.2 Literature Review and Hypothesis Development

1.2.1 Accounting Conservatism

As an important accounting principle for centuries, conservatism could be observed by using the method introduced by Basu (1997) who defines conservatism as "the accountant's tendency to require a higher degree of verification to recognize good news as gains than bad news as losses." This definition of conservatism is also identified as conditional conservatism since it is contingent on the news event involved (Beaver and Ryan 2004). Prior studies indicate that accounting conservatism[3] helps improve contracting efficiency and acts as a governance mechanism limiting managerial opportunism that is contrary to the interests of shareholders[4]. In this paper, I apply Basu's (1997) model to empirically test how accounting conservatism is shaped jointly by product market competition and legal institutions.

According to the agency theory, insiders possess more information than outsiders as well as motivations to favorably bias the information they supply to outsiders and take actions (such as asset substitution, consumption of perquisites, and empire building) that

[3] In this paper, when I mention accounting conservatism, I refer to conditional accounting conservatism.

[4] Watts (2003) and Holthausen and Watts (2001) argue that conservatism persists because it helps to address agency problems. Kim and Pevzner (2008) find that accounting conservatism is beneficial to stock market by reducing information asymmetry. Zhang (2008) documents that firms which apply more accounting conservatism experience faster debt covenant violations, thus "triggering the alarm" earlier to borrowers. Moerman (2008) shows that more conditionally conservative firms enjoy lower bid-ask spreads on the secondary loan markets. Bauwhede and Gent (2008) find that creditors reward conditional conservatism but not unconditional conservatism. Bushman et al. (2007) present evidence showing that the total and incremental investment response to declining opportunities increases with timely accounting recognition of economic losses, another form of accounting conservatism. Ahmed et al. (2002) show that debt-holders view conservatism as means of minimizing agency problems between debt-holders and shareholders and thus accounting conservatism is negatively related to cost of debt. Ball, Bushman and Vasvari (2008) show that conservatism leads under-writers to hold lower stake in issued loans. Altogether, these studies provide strong evidence that conservatism is an effective tool in reducing information asymmetry and monitoring managers' behavior.

result in deadweight losses (Jensen and Meckling 1976). By requiring higher verification standards for gains recognition, accounting conservatism reduces managers' ability and incentives to withhold information on expected losses, inflate earnings or overstate net assets (Ahmed, et al. 2002, Holthausen and Watts 2001, Watts and Zimmerman 1986, Watts 2003). Therefore, accounting conservatism could help improve contracting efficiency and eventually increase firm value.

Accounting conservatism could also play a governance role in monitoring firms' investment policies (Bushman, et al. 2007). By recognizing economic (or expected) losses earlier, conservatism facilitates identifying negative NPV projects or poorly performing investments, thus helping to improve investment efficiency (Bushman, et al. 2007). Therefore, conservatism effectively oversees the managers, limits deadweight losses from poor investment decisions, and increases firm values. Besides, conservatism could also alarm debtholders of the possible unfavorable situation earlier and help them make liquidation decisions correctly (Li 2009, Zhang 2008). In sum, conservative accounting functions as a monitoring mechanism of managers and of debt or other contracts, and is an important feature of corporate governance (Ball, et al. 2000).

The equilibrium level of accounting conservatism is determined by the demand of outsiders and the supply from insiders. Since the extant literature has identified legal institutions and product market competition as important country- and industry-level factors that influence the supply and demand of accounting conservatism, it is interesting to explore how they interact in determining accounting conservatism[5]. In particular, I

[5] Prior studies on the determinants of accounting conservatism focus on firm- (e.g. Ahmed and Duellman 2007, Lafond and Roychowdhury 2008, Qiang 2007) and country-level factors (e.g. Ball, et al. 2000, Ball, Robin and Sadka 2008, Ball, et al. 2003, Bushman and Piotroski 2006), while the research on industry-level determinants and on how different level of determinants interplay with each other is relatively scant.

empirically explore four research questions: (1) how does product market competition affect accounting conservatism? (2) do the impacts of product market competition on accounting conservatism vary with legal institutions? (3) whether the association between product market competition and accounting conservatism is nonmonotonic? (4) how does product market competition affect the relation between legal institutions and accounting conservatism?

1.2.2 Product Market Competition and Accounting Conservatism

Prior literature on the determinants of accounting conservatism primarily focuses on firm- and country-level factors while pays little attention to industry-level ones, such as product market competition. In this paper, I argue that product market competition could affect accounting conservatism in the following ways. Firstly, more intense product market competition is related to lower profitability, greater performance volatility and higher liquidation risk, resulting in a firm's higher demand for accounting conservatism to achieve more efficient contracting. Firms operating in a concentrated industry are expected to earn persistently higher profits for a long time before the earnings revert to the normal level. These firms could benefit from monopoly power, collude with their industry peers to protect their economic rents, or prevent potential competitors from entering the market by imposing high entry barriers (Eaton and Lipsey 1981, Mueller 1977). Thus, firms with strong product market power earn higher profits and generate more persistent future earnings over time (Baginski, Lorek, Willinger and Branson 1999, Lev 1983). In addition, firms in concentrated industries are likely to demonstrate less volatile performance. When

facing adverse external shocks, such companies can transfer the negative effects on firm value onto consumers rather than absorb them (Gaspar and Massa 2006, Hou and Robinson 2006). The above discussion indicates that product market competition is related to lower profitability, greater performance volatility and higher liquidation risk. Since accounting conservatism helps increase contracting efficiency, I expect that firms in more competitive industries have higher demand on accounting conservatism.

Secondly, product market competition could affect the strategy of corporate disclosure, and thus impact on the recognition timeliness of both good news and bad news. On the one hand, prior studies suggest that firms have incentives to report negative proprietary news and withhold positive news in an attempt to dissuade potential entrants (Darrough and Stoughton 1990, Evans and Sridhar 2002, Feltham and Xie 1992, Wagenhofer 1990). In these studies, both capital market participants and potential entrants receive the information disclosed by the firm. The likelihood a potential competitor will join the market and occupy a portion of the incumbent firm's market share increases as the incumbent firm discloses favorable information. However, the capital market participants respond to disclosed information and, *ceteris paribus*, the firm will benefit from higher (lower) prices when disclosing favorable (unfavorable) news. Thus, the firm must trade off between the possibility of lower valuation stemming from depressed market expectations and the reduced probability of entrance by a competitor due to more conservative accounting. Equilibria solutions from these models are consistent with the incumbent firm choosing to report more conservatively to dissuade possible competitors from entering into the product market. Therefore, from this aspect, product market competition is positively associated with accounting conservatism. On the other hand, models of rivalry between existing competitors suggest firms will provide more timely recognition of bad news and less timely

recognition of good news to communicate optimal output or pricing strategy to rival competitors. Darrough (1993) examines both Bertrand and Cournot competition and how firms in these environments will choose to voluntarily disclose proprietary information regarding costs and/or demand. Both the Bertrand and Cournot model of competition yields a disclosure strategy to disclose bad news and withhold good news, indicating a positive association between product market competition and accounting conservatism.

However, an alternative viewpoint is that product market competition reduces the severity of agency problem, and thus lowers the demand for accounting conservatism. The misbehavior of insiders is more likely to jeopardize the survival of the firm in a competitive industry. Product market competition thus represents a natural constraint on the extraction of private benefits and lowers the demand for accounting conservatism to governance insiders. From this aspect, product market competition could assuage agency conflicts and lower the demand for accounting conservatism, leading to a lower level of accounting conservatism.

I'll empirically test the competing viewpoints on the association between product market competition and accounting conservatism. For the convenience of analysis, I predict that the association between product market competition and accounting conservatism is positive. This leads to the first hypothesis:

H1: Accounting conservatism increases with the intensity of product market competition, *ceteris paribus*.

1.2.3 Legal institutions and the Relationship between Product Market Competition and Accounting Conservatism

Legal institutions might influence the channels through which product market competition exerts its influences on accounting conservatism. On the one hand, more intense product market competition is related to higher liquidation risk, resulting in a firm's higher demand for accounting conservatism to achieve more efficient contracting. Prior studies show that investors are more likely to choose liquidation when legal institutions are stronger (Claessens and Klapper 2005, Djankov, et al. 2006), leading to an even higher liquidation risk for firms in competitive industries of these countries. Therefore, in better legal institutions, the association between product market competition and liquidation risk is more pronounced, further boosting the positive association between product market competition and accounting conservatism.

On the other hand, it is also possible that legal institutions could protect investors and lower the investors' demand for conservative accounting to mitigate their concern on liquidation risk or liquidation cost triggered by product market competition. In this case, legal institutions might weaken the positive association between product market competition and accounting conservatism. Overall, I predict that legal institutions strengthen the positive association between product market competition and accounting conservatism.

Furthermore, the impacts of product market competition on accounting conservatism might vary with legal institutions simply because the association between product market competition and accounting conservatism is nonmonotonic. For example, suppose the

association between product market competition and accounting conservatism is more pronounced when industry is concentrated (assume here industries are classified into either competitive or concentrated). If strong legal institutions are dominated by competitive industries while weak legal institutions by concentrated industries, then the association between product market competition is expected to be more pronounced in strong legal institutions. Here, the impacts of legal institutions on the association between product market competition and accounting conservatism might come from the nonmonotonic impacts of legal institutions, rather than the reasons I discussed above. To assuage this concern and further explore the association between product market competition and accounting conservatism and the effects of legal institutions on this association, I also investigate whether the association between product market competition and accounting conservatism is nonmonotonic. To facilitate my analysis, I hypothesize that the association between product market competition and accounting conservatism is nonmonotonic. The above arguments lead to the following two hypotheses:

H2a: The association between product market competition and accounting conservatism is more pronounced in more competitive industries, *ceteris paribus*.

H2b: The association between product market competition and accounting conservatism is nonmonotonic.

1.2.4 Product Market Competition and the Association between Legal Institutions and Accounting Conservatism

Prior studies document a positive association between legal institutions and accounting conservatism (Ball, et al. 2000, Ball, et al. 2003, Bushman and Piotroski 2006). The logic could be summarized as the followings. First, better investor protection and law enforcement are associated with more frequent use of accounting numbers in enforceable contracts, leading to a higher demand for verifiable accounting information in these countries. As a result, firms in countries with stronger legal institutions face higher ''contracting'' demand for conservative financial report. I call it "contracting efficiency hypothesis". The second is "litigation cost hypothesis". Strong legal institutions would boost firms' potential litigation costs of overstating economic performance. Since litigation pressure is one of the drivers of accounting conservatism, strong legal institutions are expected to be related to more conservative accounting. Finally, politicians interfere less with firms' decision making in good legal institutions, enabling firms in these countries to better serve the interests of investors rather than other stakeholders (including political groups). In this vein, firms in strong legal institutions are more likely to report conservative numbers because conservatism is an important mechanism to protect investors' interests. This is "political influence hypothesis".

However, previous international studies did not take account of the potential effects of product market competition, which has been identified as an important industry-level governance mechanism for a long time (Jensen 1993, Karuna 2007, Raith 2003)[6]. Importantly, recent studies point out that managerial incentives in competitive industries might be different from those in concentrated industries (Giroud and Mueller 2009, Karuna

[6] In economic literature, product market competition has been identified as an important factor shaping managers' incentives. Economists have argued that managers' incentive problems are first and foremost an issue for firms in concentrated industries. Hicks (1935) point out that the best of all monopoly profits is a quiet life which managers tend to enjoy. Similarly, Adam Smith (1776) writes that "Monopoly [. . .] is a great enemy to good management".

2007). Prior studies simply use dummies to control industry fixed effects, a method that prevents us from understanding whether the impacts of legal institutions on accounting conservatism in competitive industries are different from those in concentrated industries. Similar to my argument, Ball et al. (2000) interpret the increasing trend of conservatism in most countries as the effects of increased international product market competition, which creates incentives for even code-law corporations to adopt accounting conservatism. Below I briefly discuss the potential effects of product market competition on the association between legal institutions and accounting conservatism.

On the one hand, product market competition could affect the contractors' demands for accounting conservatism in enforceable contracts. Firms operating in competitive industries generally earn persistently lower profits and less persistent future earnings over time (Baginski, et al. 1999).[7] For example, firms in more competitive industries are less able to transfer the negative effects on firm value to consumers (rather than absorb them) when facing adverse external shocks (Gaspar and Massa 2006, Hou and Robinson 2006). As a result, firms in competitive industries exhibit higher firm-specific earnings volatility (Irvine and Pontiff 2007) and so higher default risk than firms in more concentrated industries (Hou and Robinson 2006). The resulting increased default risk leads to a higher demand of contracting parties for the timely recognition of bad news. In an extreme case, if the firms' default risk is close to zero, then debt contractors almost have no demand for accounting

[7] The industrial organization literature provides two competing views of the nature of industry concentration. The first is the structure/conduct/performance (SCP) paradigm, which assumes that industry structure (e.g., concentration) is exogenously given and affects the behavior and profitability of firms. The second assumes that industry concentration is an endogenous consequence of dynamic industry competition (e.g., Carter 1978). This view argues that more efficient firms tend to survive in a competitive market, and thus firms in concentrated industries are survivors of competition. It suggests that firms in concentrated industries are superior to other firms and that they exhibit better performance in the long run. Although the causes may be different, both perspectives indicate that firms in concentrated industries tend to earn abnormal profits because of economic rents.

conservatism. In this case, the association between legal institutions and accounting conservatism would be rather weak. Following this argument, product market competition strengthens the demand for accounting conservatism driven by the "contracting efficiency hypothesis".

On the other hand, product market competition could affect a firm's political influence and its connections with government, and in turn impact on the predictions from "litigation cost hypothesis" and "political influence hypothesis". Firms in concentrated industries are likely to own more political influence and are more closely related to politicians, which enables them to lobby for favorite policies, oppose disfavored policies, and get government subsidies (Chari and Gupta 2008). Chari and Gupta (2008) document that firms in concentrated industries are more successful in preventing the entry of foreign competitors. In their study, liberalized industries are significantly less concentrated, with an average *HHI* of 29%, than protected industries, which have an average *HHI* of 59%.[8] Therefore, product market competition is expected to be associated with higher litigation costs. In turn, benefitting from political connections, firms in concentrated industries are more likely to assist government to fulfill its objectives and accept more government interferences. Moreover, since firms in more concentrated industries have deeper pockets, they are more likely to be the target of predatory governments. Therefore, product market competition is expected to be associated with less governmental interferences in firms' financial reports. In sum, the relation between legal institutions and accounting conservatism is stronger in more competitive industries.

[8] Collective action theory predicts that the political influence of specific industries is positively related to industry concentration. Incumbent firms in concentrated industries have a greater ability to organize and oppose policy changes that could adversely affect them (Olsen and Dietrich 1985). In this view, the likelihood of effective coordination in an industry increases with a decrease in the number of firms. If the private interest view holds, then firms in concentrated industries can more easily build barriers, succeed in lobbying for favorite policies, oppose disfavored policy changes, and get government subsidies.

On the base of the above discussion, I argue that the association between legal institutions and accounting conservatism would be more pronounced in more competitive industries. This leads to the first hypothesis:

H3: The association between legal institutions and accounting conservatism is more pronounced in industries with more intense product market competition, *ceteris paribus.*

1.3 Research Design

I modify Basu's (1997) model to empirically examine my research questions. To test **H1**, **H2a**, and **H2b**, I regress the following model in subsamples with different quality of legal institutions or with different intensity of product market competition, and then compare their coefficient differences:

$$
\begin{aligned}
NI_t = {} & a_0 + b_1 D_t + b_2 RET_t + b_3 D_t * RET_t \\
& + b_4 PMC + b_5 PMC * D_t + b_6 PMC * RET_t + b_7 PMC * D_t * RET_t \\
& + b_8 SIZE_t + b_9 SIZE_t * D_t + b_{10} SIZE_t * RET_t + b_{11} SIZE_t * D_t * RET_t \\
& + b_{12} LEV_t + b_{13} LEV_t * D_t + b_{14} LEV_t * RET_t + b_{15} LEV_t * D_t * RET_t \\
& + b_{16} MBR_t + b_{17} MBR_t * D_t + b_{18} MBR_t * RET_t + b_{19} MBR_t * D_t * RET_t \\
& + b_{20} LIT + b_{21} LIT * D_t + b_{22} LIT * RET_t + b_{23} LIT * D_t * RET_t \\
& + Country, Industry^{9}, and\ Year\ Fixed\ Effects + \xi \qquad (1)
\end{aligned}
$$

where *NI* is net income before extraordinary items (IC data 32), deflated by beginning of period prices (MVE_{t-1}). *D* is an indicator variable equal to one if *RET* is less than zero, and zero otherwise. *RET* is holding period market-adjusted return, including dividends, over the firm's fiscal accounting year. *LIT* controls for litigation risk and is coded one if a firm is in a litigious industry, zero otherwise. *CIVIL* is an indicator variable equals to one if the country has a civil law tradition, zero otherwise. I also control three firm-level control variables: firm size (*SIZE*), leverage (*LEV*), and market-to-book ratio (*MBR*). The measurement of the variables is detailed in 1- A.

Similar to MacKay and Phillips (2005), I decompose industries into three groups according to the industry classification scheme used by the U.S. Department of Justice and

[9] I control industry fixed effects using two-digit SIC code in all the models of this study.

Federal Trade Commision (1997): competitive industries (*HHI*<0.1), moderately concentrated industries (0.1<=*HHI*<0.18), and highly concentrated industries (*HHI*>=0.18). The three groups are labeled as G1, G2 and G3 respectively. Dividing full sample into subsamples facilitates my examination on how product market competition affects the association between legal institutions and accounting conservatism.

b_2 represent the timeliness of good news recognition, while b_3 capture the incremental timeliness of bad news recognition over good new recognition. According to prior literature, b_3 represent the extent of accounting conservatism. **H1** predict b_7 to be significantly positive. **H2a** predicts b_7 is more pronounced in strong legal institutions than that in weak legal institutions. Moreover, **H2b** predicts b_7 got from regressions in the sample of competitive industries is different from that got from regressions in sample of concentrated industries.

To test the **H3**, I regress the following model in subsamples with different product market competition intensity:

$$\begin{aligned} NI_t = {} & a_0 + b_1 D_t + b_2 RET_t + b_3 D_t * RET_t \\ & + b_4 LI + b_5 LI * D_t + b_6 LI * RET_t + b_7 LI * D_t * RET_t \\ & + b_8 SIZE_t + b_9 SIZE_t * D_t + b_{10} SIZE_t * RET_t + b_{11} SIZE_t * D_t * RET_t \\ & + b_{12} LEV_t + b_{13} LEV_t * D_t + b_{14} LEV_t * RET_t + b_{15} LEV_t * D_t * RET_t \\ & + b_{16} MBR_t + b_{17} MBR_t * D_t + b_{18} MBR_t * RET_t + b_{19} MBR_t * D_t * RET_t \\ & + b_{20} LIT + b_{21} LIT * D_t + b_{22} LIT * RET_t + b_{23} LIT * D_t * RET_t \\ & + b_{24} CIVIL + b_{25} CIVIL * D_t + b_{26} CIVIL * RET_t + b_{27} CIVIL * D_t * RET_t \\ & + Industry\ and\ Year\ Fixed\ Effects + \xi \end{aligned} \quad (2)$$

where *PMC* is the measure of product market competition and equals to minus one multiplied by *HHI*. To calculate *HHI*, I get the sales data of both public firms and private

firms from the *Bureau van Dijk* (*BvD*) *Orbis*. I use 8,190,848 observations (1,490,106 public and private companies, from 1999-2007) around the world to calculate *HHI*, which would more accurately reflect the extent of product market competition than ratios constructed using data only from *Global Vantage*, which is comprised almost entirely of publicly-traded firms (Ali, et al. 2005).

H3 predicts the positive b_7 of equation (2) got from regressions in the sample of competitive industries is more pronounced than that got from regressions in the sample of concentrated (highly concentrated) industries.

1.4 Sample Selection and Descriptive Statistics

1.4.1 Sample Selection

My sample consists of listed companies from 38 countries around the world: thirteen in Asia, sixteen in Western Europe, seven in North and South America, and three in Oceania and Africa [10]. The sample period spans from 1999 to 2007 because of the data availability to calculate *HHI*. Accounting income and other financial data are from the *Global Vantage Industrial/ Commercial* (*IC*) files. Stock price data is drawn from the *Global Vantage Issues* files. I exclude firm-year observations with nonfully consolidated financial statements, and those with missing values to compute dependent and independent variables. Next I keep only those observations in countries with legal institution measures for the 49 countries surveyed in La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) and La Porta, Lopez-De-Silanes, and Shleifer (2006). I then delete observations in regulated industries, including financial institutions (SIC 6000-6999) and government-owned companies (SIC 9000-9999). To mitigate the influence of outliers, I winsorize each variable (*NI*, *RET*, *LEV*, *SIZE*, *MBR*) at the 1st and 99th percentile values and delete observations with the absolute value of studentized residuals greater than three in the accounting conservatism analysis. To calculate Herfindal-Hirschman Index (HHI), I draw financial data of both public and private firms from *Bureau van Dijk* (*Bvd*) *ORBIS*[11]. I use 8,190,848 observations (1,490,106 public and private companies, from 1999-2007)

[10] The 13 Asian countries include Hong Kong, India, Indonesia, Israel, Japan, Korea, Malaysia, Pakistan, the Philippines, Singapore, Taiwan, Thailand, and Turkey. The 16 European countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. I also include Argentina, Brazil, Canada, Chile, Mexico, Peru, and the U.S. from North and South America and Australia, New Zealand, and South Africa from Oceania and Africa.

[11] *Bureau van Dijk* (*Bvd*) *ORBIS* contains both the financial information of public and private firms. Therefore, it contains all the firms listed in *Compustat Global Vantage.*

around the world to calculate *HHI*, which would more accurately reflect the extent of product market competition than ratios constructed using data only from *Global Vantage*, which is comprised almost entirely of publicly-traded firms (Ali, et al. 2005). Table 1 describes the sample selection procedure in details.

[Insert Table 1 around here]

1.4.2 Descriptive Statistics

Table 2 summarizes the descriptive statistics by country, industry, and firm and provides the correlation matrix among the variables used in the regressions. Panel A reports the mean values of each variable for each country sample and for the total sample. The median and standard deviation of each variable are also reported for the total sample. As shown in the second column, the size of the country samples ranges from 106 firm-years for Argentina to 21,046 firm-years for the United States. Accounting earnings (NI_t) have positive mean values except for those of Australia (-5.9%), Canada (-1.8%), Germany (-0.7%), Sweden (-2%), UK (-0.2%), and the U.S. (-0.6%). Consistent with Bushman and Piotroski (2006) and other prior studies, accounting earnings are negatively skewed and stock returns are positively skewed. Moreover, stock returns display greater volatility than accounting income, indicating that managers tend to smooth earnings. Industry concentration (HHI_t) shows considerable variations across countries[12]. Japan has the highest average level of product market competition (PMC_t = -0.134), and Turkey has the

[12] As we can see from Table 2, the *HHI* for the US sample is less than those using data of public firms to calculate *HHI* but greater than those using the data from census database. This means that the accuracy of our *HHI* is higher than that only using data of public firms but lower than that using census database. This is because *BVD* does not cover all the private firms in the economy (although it covers most).

lowest (PMC_t = -0.872). Leverage (LEV_t) and market-to-book ratio (MBR_t) also vary significantly across countries. The standard deviation of LEV_t (MBR_t) is 1.1 times (0.7 times) greater than the mean value for the total sample. Firm size shows relatively lower variation compared with other variables.

Panel B of Table 2 reports the summary statistics of variables across different subsamples. G1's mean (median) value of *PMC* is -0.051 (-0.047), indicating a high extent of product market competition. G3 gathers the most concentrated industries, with mean (median) value of *PMC* at -0.480 (-0.397). Standard deviation of *PMC* appears to be lowest in G2 while highest in G3. Consistent with prior studies, the mean and median values of accounting income show an increasing trend from G1 to G3, suggesting that companies in concentrated industries enjoy higher profitability. The mean (median) value of *RET* is highest in G2 (-1.3%) and shows no significant difference between G1 and G3, which is different from the findings of Hou and Robinson (2006). However, my sample consists of companies around the world, while Hou and Robinson (2006) only explore companies in the U.S. In addition, I do not control other important control variables, and so cautions should be made when comparing my statistics here with those of Hou and Robinson (2006).The mean and median value of *LEV* and *SIZE* are increasing from G1 to G3, consistent with prior findings. Moreover, *LIT* is highest in G1 and lowest in G3, indicating that firms in competitive industries endure more litigation risk. The standard deviations of *NI*, *RET*, *LEV* and *MBR* appear no clear trends across the three groups, while the standard deviations of *SIZE* and *LIT* are decreasing from G1 to G3.

Panel C reports descriptive statistics for the country-level variables. Consistent with Bushman and Piotroski (2006), these statistics are tabulated using only one observation for every country. Panel C reveals significant cross-country variations in institutional features.

Panel D reports correlation matrix for the country-level variables. Pearson (Spearman) correlations are presented above (below) the diagonal, and the correlation coefficients in bold are significant at the 5-percent level. *SECREG*, *PUBLENF*, *INVPRO* are significantly higher in common law countries (*CIVIL=0*), and *INVPRO* is positively correlated with *SECREG* and *PUBLENF*.

[Insert Table 2 around here]

Panel E of Table 2 reports the correlation matrix among the industry- and firm-level regression variables. Consistent with prior literature, accounting earnings (NI_t) are positively correlated to stock returns (RET_t). Product market competition (PMC_t) is negatively related to accounting earnings (NI_t), suggesting that product market competition has a negative effect on firms' profitability. In addition, product market competition (PMC_t) is negatively associated with firm size ($SIZE_t$) and leverage (LEV_t), indicating that product market competition shrinks the scale of firms and keeps them from using financial leverages. However, these results should be interpreted with cautions, as the pairwise correlations may suffer from correlated omitted variables, which are controlled for in the regression analyses.

1.5 Empirical Results

My multivariate tests are estimated using ordinary least squares (OLS). For brevity, I suppress the tabulation of the estimates on control variables. In all the regressions, I report robust t-statistics after correcting for firm clustered standards errors that are likely to be present in the panel data (Petersen 2009).

1.5.1 Regression results on how product market competition affects accounting conservatism

To explore how product market competition affects accounting conservatism, I regress equation (1) using the full sample. In this regression, I include the measure of the intensity of product market competition in Basu's (1997) model and control for important control variables (firm size, leverage, market-to-book ratio, and litigation risk) identified in prior studies. Moreover, I also control country, industry (two-digit SIC code), and year fixed effects.

As shown in Table 3, the coefficients on *D*RET* are significantly positive, indicating the existence of accounting conservatism. Moreover, the coefficients on *PMC*RET* are significantly negative and those on *PMC*D*RET* are significantly positive in the full-sample regressions, indicating that product market competition is negatively associated with the timeliness of good news recognition and positively associated with the incremental timeliness of bad news recognition. Since both negative timeliness of good news recognition and positive incremental timeliness of bad news recognition represent conservative accounting (Bushman and Piotroski 2006), the empirical results in Table 3

implies that the association between product market competition and accounting conservatism is positive, consistent with my first hypothesis **H1**.

Moreover, in the untabulated results, the coefficients on SIZE*D*RET (b_{11}), LEV*D*RET (b_{15}) and LIT*D*RET (b_{23}) are significantly positive, while the coefficients on MBR*D*RET (b_{19}) are significantly negative. These results are consistent with findings of prior studies, strengthening the validity of my empirical analysis.

1.5.2 Regression results on how legal institutions affect the association between product market competition and accounting conservatism

Table 3 also presents the by-group regressions results for equation (1) in strong and weak legal institutions separately. Panel A sets the legal institutions to Security Law (*SECREG*) and Public Enforcement (*PUBLENF*), while Panel B sets legal institutions to Investor Protection (*INVPRO*) and Rule of Law (*RULE*).

As we can see from the subsample of strong legal institutions in Table 3, the coefficients on *PMC*D*RET* are significantly positive and the coefficients on *PMC* RET* are significantly negative in both Panel A and B. Moreover, the t-statistics of the coefficients on *PMC*D*RET* in the strong-legal subsamples are larger than those in the full sample in 3 out of 4 regressions.

Surprisingly, the coefficients on *PMC*D*RET* are significantly negative in 3 out of 4 regressions in the weak-legal subsamples, indicating that product market competition might drive managers to use less accounting conservatism in weak legal institutions. These results suggest that legal institutions strengthen the positive association between product market competition and accounting conservatism, consistent with the prediction of **H2a**. However,

they are contrary to **H1** and the conjecture of Ball et al. (2000). It is possible that product market competition only works when its level is above certain threshold, then simply running the regression in the full sample including both competitive industries and concentrated industries might hide some important information and lead to biased results. For example, if weak legal institutions are dominated by concentrated industries and strong legal institutions are dominated by competitive industries, then the coefficient differences between weak legal institutions and strong legal institutions might be driven by the differences between competitive industries and concentrated industries. To avoid the problem of endogenous determined product market competition and reveal the possible nonmonotonic relationship between product market competition and accounting conservatism, I regress equation (1) across groups with different intensity of product market competition in strong- and weak-legal subsamples separately. In 5.3, I'll summarize and discuss the main findings of these regressions.

[Insert Table 3 around here]

1.5.3 Regression results on whether the association between product market competition and accounting conservatism is nonmonotonic

Table 4 provides the empirical analysis for **H2b**. I regress equation (1) across the three groups (G1-G3) in the subsamples of strong and weak legal institutions separately. Panel A/C/E/G present the by-group regression results in strong legal institutions, and Panel B/D/F/H present those in weak legal institutions.[13]

[13] For brevity, I omit the by-group regression results of the full sample (including both strong and weak legal institutions), because the results are similar and support my conclusions.

In strong legal institutions, the coefficients on *PMC*D*RET* are all significantly positive in competitive industries and only significantly positive in 2 out of 8 regressions in the moderately and highly concentrated industries. The results indicate that, even in strong legal institutions, the association between product market competition and accounting conservatism is weak when product markets are concentrated.

In the weak legal institutions, the coefficients on *PMC*D*RET* are significantly positive in 3 out of 4 regressions in competitive industries, and the t-statistics of these coefficients are significantly lower than those in the strong legal institutions (P-values on the coefficient differences are all less than 0.01), supporting **H1** and **H2a**. While in moderately and highly concentrated industries, the coefficients on *PMC*D*RET* are significantly positive in 1 out of 8 regressions (Panel H, moderately concentrated industries) and insignificant in the remaining 7 regressions. Moreover, in the moderately and highly concentrated industries, the coefficients on *PMC*D*RET* are significantly lower in weak legal institutions than those in strong legal institutions in 6 out of 8 cases (except when LI=rule of law), consistent with my second hypothesis. Generally, the results in Table 4 suggest that the association between product market competition and accounting conservatism is nonmonotonic, only significantly positive in competitive industries, and more pronounced in stronger legal institutions.

[Insert Table 4 around here]

1.5.4 Regression results on how product market competition affects the association between legal institutions and accounting conservatism

To detect the effects of product market competition on the association between legal

institutions and accounting conservatism, I run regressions in three different groups, with G1 representing the most competitive industries and G3 the most concentrated industries. The results are presented in Table 5. I use Security Regulation (*SECREG*), Public Enforcement (*PUBLENF*), Investor Protection (*INVPRO*), and Rule of Law (*RULE*) to proxy for legal institutions in Panel A, B, C and D respectively.

As shown in Table 5, the coefficients on *D*RET* are significant in all the groups, indicating the existence of accounting conservatism in all the groups when legal institutions are weak. This is not surprising since accounting conservatism is innate in the accounting discipline and is driven by many different factors, such as contracting, shareholder litigation, taxation, and accounting regulation (Watts 2003).

Consistent with the results of Bushman and Piotroski (2006), the coefficients on *LI*D*RET* (b_7) are significantly positive in the full sample for 3 out of 4 regressions (except Panel A), indicating a positive association between legal institutions and accounting conservatism. However, the regression results are different across the three groups. Strikingly, in the subsamples, *b7* is only significantly positive in competitive industries. In competitive industries, *b7* is significantly positive in all the four regressions. In moderately concentrated industries, *b7* is insignificantly positive in all the four regressions. Moreover, in the highly concentrated industries, the results are mixed. Therefore, in G2 and G3, I find no evidence of positive association between legal institutions and accounting conservatism. This suggests that the positive association between legal institutions and accounting conservatism documented by the prior studies only holds in competitive industries.

In sum, the empirical results in Table 5 provide evidences consistent with my first hypothesis and imply that when industry is concentrated legal institutions function limitedly.

[Insert Table 5 around here]

1.6 Robustness Checks

1.6.1 Reestimation using Ball & Shivakumar (2006) Model

An important concern is that the Basu's (1997) Model applied in the empirical tests may be greatly affected by the different extent of market efficiency around the world. To assuage this concern, I borrow the model from Ball and Shivakumar (2005, 2006) to examine the asymmetric timeliness of earnings without reference to security prices. Specifically, I present estimations of the following model:

$$\begin{aligned} ACCRUALS_t = {} & c_0 + c_1 NCFO_t + c_2 CFO_t + c_3 NCFO_t * CFO_t \\ & + c_4 PMC/LI_t + c_5 PMC/LI_t * NCFO_t + c_6 PMC/LI_t * CFO_t \\ & + c_7 PMC/LI_t * NCFO_t * CFO_t \\ & + c_8 FASSET_t + c_9 FASSET_t * NCFO_t + c_{10} FASSET_t * CFO_t + c_{11} FASSET_t * CFO_t \\ & + c_{12} \Delta SALES_t + c_{13} \Delta SALES_t * NCFO_t + c_{14} \Delta SALES_t * CFO_t + c_{15} \Delta SALES_t * N * CFO_t \\ & + Fixed\ Effects + \xi \end{aligned} \quad (3)$$

where $ACCRUALS_t$ is current period accruals, CFO_t is current period operating cash flows, and $NCFO_t$ is an indicator variable equal to one if CFO_t is negative, zero otherwise. Since Hribar and Collins (2002) argue that current (working capital) accruals are biased when estimated from changes in balance sheet data, I use the *CFO* data directly from cash flow statement in this paper. As we can see from Table 6, the coefficients on PMC*NCFO*CFO are significantly positive, consistent with **H1**. Moreover, in the subsample of strong legal institutions, the coefficients on PMC*NCFO*CFO are significantly positive in all the four regressions. While in subsample of weak legal institutions, the coefficients on PMC*NCFO*CFO are insignificant

in all the four regressions. This indicates that legal institutions strengthen the positive association between product market competition and accounting conservatism, consistent with **H2a**. In Table 6.2, we can see that positive association between product market competition generally exists in the group of competitive industries. In moderately and highly concentrated industries, there are only 2 out of 16 regressions report positive coefficients on PMC*NCFO*CFO. The evidences in Table 6.2 indicate a nonmonotonic association between product market competition and accounting conservatism. Finally, Table 6.3 reports that the positive association between legal institutions and accounting conservatism only exists in competitive industries, consistent with the findings in the main tables. Overall, the results here are similar to those in Table 3, Table 4, and Table 5, further strengthen the validity of my conclusions.

[Insert Table 6 around here]

1.6.2 Including other measures of product market competition

Recent studies of industry competition suggest that competition encompasses several dimensions, such as product substitutability, market size, and entry costs, given the level of concentration (e.g., Karuna 2007, Raith 2003).[14] Hence, I introduce into my regressions three different dimensions of industry concentration as alternative measures of the *HHI* – product substitutability (*DIFF*), market size (*MKTSIZE*), and entry cost (*ENTCOST*) – which are described in Appendix 1-A. In Table 7.1, the coefficients on *MKTSIZE*D*RET* and

[14]They argue that concentration by itself may be a poor proxy for competition, as the relation between concentration and competition is not clear.

*PMC*D*RET* are significantly positive and those on *ENTCOST*D*RET* are significantly negative, consistent with my first hypothesis. However, the coefficients on *DIFF*D*RET* are insignificant. Moreover, the above positive associations generally exist in strong legal institutions, consistent with **H2a**. In Table 7.2, the positive association between product market competition and accounting conservatism only exists in competitive industries, consistent with **H2b**. Overall, the results in Table 7 are consistent with those in the main tables.

[Insert Table 7 around here]

1.6.3 Reestimation using three-year Basu (1997) specification

Roychowdhury and Watts (2007) argue that the beginning composition of equity value affects asymmetric timeliness measured over short horizons. Specifically, past timeliness of earnings with respect to returns influences future earnings timeliness over short periods, which might affect the results of Basu's (1997) model. To mitigate the concern that one-year Baus's (1997) model might lead to biased results, I reexamine my research questions using earnings and return over longer periods, specifically, over the following three years.

$$\begin{aligned} NI_{t\text{-}3,t} = {} & d_0 + d_1 D_{t\text{-}3,t} + d_2 RET_{t\text{-}3,t} + d_3 D_{t\text{-}3,t} * RET_{t\text{-}3,t} \\ & + d_4 PMC_t/LI_t + d_5 PMC_t/LI_t * D_{t\text{-}3,t} + d_6 PMC_t/LI_t * RET_{t\text{-}3,t} \\ & + d_7 PMC_t/LI_t * D_{t\text{-}3,t} * RET_{t\text{-}3,t} \\ & + Control\ Variables + Fixed\ Effects + \xi \end{aligned} \quad (4)$$

where *NI* is equal to the sum of net income before extraordinary items over the estimation period divided by beginning of estimation period market value of equity. *RET* is equal to the market-adjusted buy-and-hold return over the estimation period. *D* is equal to one if *RET* is negative, zero otherwise. *D* is equal to one if *RET* is negative, zero otherwise.

The untabulated results of replicating the results in Table 3, Table 4, and Table 5 using three-year asymmetric timeliness measures are similar to my main results.

1.6.4 Using firm-level accounting conservatism measure

Basu's (1997) return model has several economic and econometric problems (Dietrich, Muller and Riedl 2007, Givoly, Hayn and Natarajan 2007). To assuage the concern that my estimation on accounting conservatism is noisy, I use the methodology proposed by Khan and Watts (2007) to calculate firm-level accounting conservatism measure – C_score. Then I reexamine all the research questions using C_score as the dependent variable, and the empirical results remain qualitatively unchanged. Moreover, I also use industry-average C-scores as the dependent variable to reinvestigate all the research questions and get similar results.

1.6.5 Influence of the Cutting Point of the Industry Groups

In this study, I separate the full sample into three groups according to the industry classification scheme adopted by the U.S. Department of Justice and Federal Trade Commission (1997). However, whether the classification scheme is also suitable for countries outside the U.S. is unknown. To increase the robustness of my study, I follow Giroud and Mueller (2009) to divide the full sample into three equal-sized groups based on whether the *HHI* lies in the lowest, medium, or highest tercile of its empirical distribution. Overall, the results are similar to my main results. However, we should note here that this criterion is also

arbitrary and my computation of *HHI* generally overestimates the *HHI* because it is impossible to get the financial data of all the firms around the world.

1.6.6 Influence of other important country-level control variables

To keep my study comparable to Bushman and Piotroski (2006), I only include legal origin as the country-level control variable in equation (1). However, Ball et al. (2008) argue that debt markets – not equity markets – are the primary influence on the adoption of accounting conservatism. To verify that my results are not driven by omitted market importance variables that are correlated with legal institutions, I add the size of debt market and equity market into my regression model and reexamine the tests on equation (1). The results (untabulated) are similar to those reported in Table 3.

1.6.7 Other robustness checks

I also conduct a number of other robustness checks. Firstly, I adopt two typical industry measures, a four- and an eight-firm concentration ratio, as alternative industry concentration measures. In addition, it is possible that there is competition among firms in countries located in the same region. In this case, calculation of *HHI* using regional classification might be more accurate than a within-country calculation. Therefore, I also calculate *HHI* using regional classification[15]. Empirical tests using the above alternative industries measures produce similar results to my main results. Secondly, to accommodate the potential nonlinear relation, I

transform *HHI* into a fractional rank variable, and reestimate all the regressions. The results remain qualitatively unchanged. Thirdly, as the sample size varies across countries, I apply weighted least squares (*WLS*) procedures, placing an equal weight on each country sample. The untabulated results are similar to those reported in Table 3, Table 4, and Table 5. In sum, the sensitivity tests reveal that my results appear robust. Fourthly, the *PMC* is located between 0 and -1 and thus is a truncated variable. To avoid empirical problems caused by this truncated variable, I standardize *PMC* so that *PMC* could be both positive and negative, and reexamine all the research questions. In the untabulated table, the results are consistent with my predictions. Fifthly, I also run the industry-level regressions to assuage the problem that the results might be driven by the industries with great number of firms. I find results consistent with the main results and further strengthen the robustness of my conclusions (untabulated).

[15] According to World Bank, I classify countries into six regions: Africa, East Asia and Pacific, Europe and Central Asia, Latin America and Caribbean, Middle East and North Africa, and South Asia.

1.7 Conclusions

In this paper, I examine the association between product market competition and accounting conservatism, and whether this association varies with legal institutions and product market competition. Moreover, I also investigate whether product market competition influences the positive association between legal institutions and accounting conservatism documented by prior studies.

In sum, I have the following empirical findings. First, product market competition is *positively* associated with accounting conservatism. Second, the positive association between product market competition and accounting conservatism is *significantly stronger* in countries with better legal institutions. Third, the positive association between product market competition and accounting conservatism *only exists* in competitive industries. Finally, the positive association between legal institutions and accounting conservatism documented by prior literature *only exists* in competitive industries.

This study contributes to the literature in a number of ways. First, this study adds to the research on determinants of accounting conservatism. Prior studies generally focus on country- and firm-level determinants of accounting conservatism, while this study investigate how product market competition, and important industry-level factor, affect accounting conservatism. Second, to my knowledge, this paper is the first empirical study to provide evidence on how the association between product market competition and accounting conservatism varies with legal institutions. My results suggest that legal institution strengthen the effects of product market competition on accounting conservatism. Third, as far as I am aware, this study is the first one to reveal the nonmonotonic association between product

market competition and accounting conservatism. By decomposing the full sample into different groups according to product market competition intensity, I find that the positive association between product market competition and accounting conservatism only exists in competitive industries, supporting a nonmonotonic correlation between product market competition and accounting conservatism. Finally, it adds to the literature on the role of legal institutions in shaping accounting conservatism. By introducing product market competition as an important industry-level corporate governance mechanism, I find that only in competitive industries can legal institutions positively impact conservatism. This finding suggests that product market competition could affect the function of legal institutions. When industry is concentrated, legal institutions function limitedly in driving managers to act properly. The results deepen existing understanding of the determinants of accounting conservatism and extend prior studies, such as Bushman and Piotroski (2006), Ball et al. (2000) and Ball et al. (2003).

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Appendix 1-A Variable Definitions

Variable	Definition
Country Variables	
$CIVIL_t$	Indicator variable equal to zero if the country has a civil law tradition (i.e., French, German or Scandinavian legal tradition), one otherwise. Variable coded as missing if country has a socialist legal tradition.
$SECREG_t$	Security regulation in Hail and Leuz (2006) that is the arithmetic mean of the three La Porta et al. (2006) indices: disclosure requirement, liability standard, and public enforcement indices.
$PUBLENF_t$	Index of public enforcement of securities laws, measured as the arithmetic mean of four underlying indices: Supervisor Characteristics index, investigative Powers index, Orders index and Criminal index. The variable is ranked between 0 (weak public enforcement to 1 (strong public enforcement).
$INVPRO_t$	Index of investor protection, constructed as the principal component of disclosure, liability standards, and anti-director rights. Scale is from 0 to 10. This data is available from La Porta et al. (2006).
$RULE_t$	Government enterprises and investment as a percentage of GDP. Data on the number, composition and share of output supplied by State-operated enterprises and government investment as a share of total investment were used to construct the 0 (high percentage)-to-10 (low percentage) ratings. All country-year observations are based on the nearest available rating. Ratings are available for calendar years 2000 and 2001, 2004, 2005 and 2006. This data is available from the 2008 Annual report and dataset of Economic Freedom of the World.
Industry Variables	
HHI_t	Herfindahl-Hirschman index is the sum of the squared market shares of the firms competing in each industry-country sample. Industry membership is classified by the three-digit SIC code. This data is get from *Bureau van Dijk* (*BvD*) *Orbis*.
PMC_t	Index of product market competition, which is calculated as minus one multiplied by the HHI_t, consistent with Dhaliwal et al. (2008).
$DIFF_t$	DIFF is equal to the sales/operating costs for each industrial segment: operating costs include the cost of goods sold; selling, general, and administrative expenses; and depreciation, depletion, and amortization. Industry segment is classified by the three-digit SIC code. DIFF measures the extent of product substitutability in the industry.
$MKTSIZE_t$	Natural logarithm of industry sales (industry sales is computed as the sum of segment sales for firms operating in the industry). Industry segment is classified by the three-digit SIC code.
$ENTCOST_t$	Natural logarithm of the weighted average of the gross value of the cost of property, plants, and equipment for firms in an industry, weighted by each firm's market share in the industry. Industry membership is classified by the three-digit SIC code.

$CONC4_t$ Proportion of sales in the industry accounted for by the four largest firms (by sales) in the industry (industry sales are computed as in MKTSIZE above).

$CONC8_t$ Proportion of sales in the industry accounted for by the eight largest firms (by sales) in the industry (industry sales are computed as in MKTSIZE above).

Firm Variables

RET_t Holding period market-adjusted return, including dividends, over the firm's fiscal accounting year. This data is draw from *Standard and Poor*'s *Global Vantage Issues* files.

MVE_t Market value of equity at the end of a given fiscal year, defined as number of shares outstanding times closing price available for the last month of the fiscal year. This data is gathered from *Standard and Poor*'s *Global Vantage Issues* files.

NI_t Net income before extraordinary items (IC data 32), deflated by beginning of period prices (MVE_{t-1}). This data is draw from *Standard and Poor*'s *Global Vantage Industrial /Commercial* files.

D_t An indicator variable equal to one if *RET* is less than zero; zero otherwise.

CFO_t Operating cash flow, deflated by beginning of period prices (MVE_{t-1}). This data is draw from *Standard and Poor*'s *Global Vantage Industrial /Commercial* files.

$ACCRUALS_t$ Total accruals, deflated by the average total assets, defined as Net income before extraordinary items minus cash flow from operating activities, scaled by the average total assets. This data is draw from Standard and Poor's Global Vantage Industrial /Commercial files.

$NCFO_t$ An indicator variable equals to one if CFO_t is less than zero; zero otherwise.

LEV_t Leverage is the total debt deflated by the average total assets.

SIZE Firm size is the natural logarithm of the total assets (in millions of U.S. dollars) at the end of fiscal year t.

MBR_t Market-to-book ratio is the market value of equity divided by the book value of equity.

LIT_t *LIT* is coded one if a firm is in a litigious industry - SIC codes 2833–2836, 3570– 3577, 3600–3674, 5200–5961, and 7370 - and zero otherwise.

FASSET Book value of fixed assets scaled by the average total assets.

$\Delta SALES_t$ Change in sales scaled by the average total assets.

TABLE 1 Sample Selection

Sample-Selection Process	Obs. Removed	Obs. Remaining
Initial sample from 1999 to 2007 in the Global Vantage database for the 38 economies in Bushman and Piotroski (2006)		128,695
After eliminating firms with nonfully consolidated financial report	(7,125)	121,570
After eliminating firms with missing values of dependent and independent variables	(33,389)	88,181
After eliminating financial institutions (SIC 6000-6999) and government-owned companies (SIC 9000-9999)	(1,083)	87,098
After excluding observations with |studentized residuals|>3	(2,263)	84,835

Notes: This table presents the sample selection process and data requirements for the regressions. The final sample for these regressions consists of listed companies from 38 economies: thirteen in Asia (Hong Kong, India, Indonesia, Israel, Japan, Korea, Malaysia, Pakistan, the Philippines, Singapore, Taiwan, Thailand, and Turkey), sixteen in Western Europe (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom), six in North and South America (Argentina, Brazil, Canada, Chile, Mexico, and the U.S.), and three in Oceania and Africa (Australia, New Zealand, and South Africa from Oceania and Africa).

Table 2 Summary statistics and correlations

Panel A: Country-level descriptive statistics								
Country	Obs	*NI*	*RET*	*PMC*	*LEV*	*SIZE*	*MBR*	*LIT*
Argentina	106	0.057	-0.065	-0.669	1.174	20.347	5.289	0.151
Australia	3923	-0.059	-0.030	-0.326	0.280	17.456	3.187	0.179
Austria	335	0.043	0.001	-0.550	0.887	19.451	1.925	0.093
Belgium	538	0.042	0.006	-0.283	0.764	19.594	2.508	0.201
Brazil	728	0.045	-0.123	-0.459	0.415	20.740	9.009	0.089
Canada	1774	-0.018	-0.002	-0.430	0.552	19.918	2.831	0.193
Chile	447	0.048	-0.002	-0.504	0.660	19.917	1.895	0.092
Denmark	515	0.021	-0.046	-0.723	0.639	18.731	2.687	0.140
Finland	683	0.030	0.002	-0.331	0.508	19.357	2.403	0.145
France	3288	0.019	-0.042	-0.148	0.695	19.223	2.589	0.178
Germany	3560	-0.007	-0.007	-0.263	0.701	19.067	2.438	0.192
Greece	408	0.057	0.041	-0.350	0.529	20.066	3.740	0.152
Hong Kong	569	0.034	-0.047	-0.720	0.528	19.694	1.625	0.274
India	812	0.112	-0.073	-0.256	0.862	19.689	3.154	0.220
Indonesia	782	0.071	-0.061	-0.626	1.466	18.285	2.197	0.113
Ireland	182	0.023	-0.060	-0.808	0.279	18.645	3.076	0.082
Israel	263	0.033	0.003	-0.571	0.873	19.896	2.657	0.327
Italy	1236	0.002	0.008	-0.183	0.692	20.082	2.299	0.120
Japan	17776	0.023	0.001	-0.134	1.070	19.828	1.561	0.194
Korea	1240	0.104	0.017	-0.213	1.265	20.536	1.396	0.261
Malaysia	3586	0.025	-0.014	-0.352	0.870	18.158	1.346	0.104
Mexico	278	0.076	-0.007	-0.620	0.604	21.200	1.850	0.180
Netherlands	979	0.030	-0.024	-0.392	0.491	19.525	3.511	0.179
New Zealand	276	0.045	0.035	-0.842	0.498	18.626	2.774	0.156
Norway	556	0.017	0.025	-0.643	0.727	19.120	3.028	0.169
Pakistan	180	0.155	-0.080	-0.564	0.644	18.800	2.130	0.056
Philippines	426	0.007	-0.147	-0.668	1.011	18.265	1.905	0.157
Portugal	142	0.033	-0.023	-0.281	1.274	20.216	2.253	0.155
Singapore	2265	0.040	0.001	-0.313	0.566	18.368	1.788	0.233
South Africa	570	0.091	-0.067	-0.595	0.303	19.536	3.120	0.267
Spain	735	0.054	0.000	-0.189	0.548	20.547	3.123	0.099
Sweden	1425	-0.020	-0.026	-0.226	0.320	18.603	3.077	0.165
Switzerland	1057	0.038	0.028	-0.525	0.460	19.849	3.116	0.194
Taiwan	3439	0.039	0.012	-0.264	0.581	19.147	1.712	0.464
Thailand	1659	0.083	-0.005	-0.278	1.082	18.149	1.612	0.083
Turkey	116	0.094	-0.027	-0.872	0.303	20.352	2.813	0.267
UK	6935	-0.002	0.001	-0.422	0.379	18.844	3.112	0.209
USA	21046	-0.006	-0.087	-0.200	0.606	20.137	3.110	0.278
	84835							
Mean		0.014	-0.029	-0.271	0.708	19.451	2.590	0.216
Median		0.046	-0.126	-0.165	0.241	19.361	1.531	0.000
Std.		0.180	0.566	0.270	1.459	1.939	4.308	0.412

Table 2 (continued)

Panel B: Descriptive Statistics across Groups

	Mean			Median			Std.		
	G1	G2	G3	G1	G2	G3	G1	G2	G3
NI	0.005	0.008	0.025	0.039	0.042	0.053	0.170	0.196	0.178
RET	-0.033	-0.013	-0.033	-0.127	-0.122	-0.127	0.566	0.598	0.552
PMC	-0.051	-0.136	-0.480	-0.047	-0.134	-0.397	0.026	0.022	0.263
LEV	0.483	0.516	0.520	0.457	0.511	0.519	0.285	0.287	0.268
SIZE	0.478	0.506	0.512	0.467	0.515	0.522	0.269	0.295	0.298
MBR	0.501	0.492	0.503	0.498	0.488	0.507	0.290	0.292	0.286
LIT	0.264	0.252	0.168	0.000	0.000	0.000	0.441	0.434	0.374

Panel C: Descriptive statistics for country-level variables

Variable	n	Mean	Std.	Min	10^{th}	25^{th}	50^{th}	75^{th}	90^{th}	Max
CIVIL	38	0.63	0.49	0.00	0.00	0.00	1.00	1.00	1.00	1.00
SECREG	38	1.06	0.43	0.34	0.48	0.75	1.03	1.36	1.71	1.88
PUBLENF	38	0.50	0.26	0.00	0.15	0.29	0.50	0.69	0.88	0.90
INVPRO	38	3.18	1.37	0.00	1.00	2.00	3.00	4.00	5.00	5.00
RULE	38	0.61	0.50	0.00	0.10	0.36	1.00	1.00	1.00	1.00

Panel D: Pearson (above the diagonal) and Spearman rank (below the diagonal) correlations

Variable	*CIVIL*	*SECREG*	*PUBLENF*	*INVPRO*	*RULE*
CIVIL	1	**-0.546**	**-0.436**	**-0.468**	0.053
SECREG	**-0.546**	1	**0.684**	**0.794**	-0.162
PUBLENF	**-0.436**	**0.684**	1	**0.582**	**-0.377**
INVPRO	**-0.468**	**0.794**	**0.582**	1	-0.077
RULE	0.053	-0.162	**-0.377**	-0.077	1

Panel E: Pearson (above the diagonal) and Spearman rank (below the diagonal) correlations

Variable	*NI*	*RET*	*PMC*	*LEV*	*SIZE*	*MBR*	*LIT*
NI	1	**0.242**	**-0.053**	**-0.064**	**0.196**	**0.065**	**-0.075**
RET	**0.362**	1	-0.002	**-0.131**	0.001	**0.243**	**-0.007**
PMC	**-0.089**	-0.000	1	**-0.041**	**-0.012**	0.000	**0.093**
LEV	0.004	**-0.100**	**-0.047**	1	**0.234**	**-0.424**	**-0.153**
SIZE	**0.182**	**0.076**	**-0.037**	**0.239**	1	**0.100**	**-0.039**
MBR	**0.006**	**0.217**	-0.011	**-0.418**	**0.100**	1	**0.110**
LIT	**-0.103**	**-0.040**	**0.089**	**-0.153**	**-0.040**	**0.111**	1

Panel A of this table presents the country-level summary statistics for the research variables. The mean values of each variable are calculated and reported for each sample country. The last three rows report the cross-country mean, median, and standard deviation. Panel B of this table presents the mean and median statistics of the research variables across the three subsamples (G1-G3). Panel C of this table reports the descriptive statistics for country-level variables. Panel D of this table presents correlation matrix of country-level variables. Panel E of this table presents correlation matrix of firm- and industry-level variables for 84,835 observations over the 1999-2007 period. The correlation coefficients in bold are significant at the 5-percent level. See Appendix 1-A for variable definitions.

Table 3 Evidences on the association between product market competition and accounting conservatism and how it is affected by legal institutions

Panel A: Legal institutions=Security law & Public Enforcement

	Legal Institution=Security Law			Legal Institution=Public Enforcement		
Variable	All firms	Strong	Weak	All firms	Strong	Weak
RET	-0.019*	-0.049***	0.054***	-0.019*	-0.053***	0.050***
	(-1.654)	(-3.184)	(3.516)	(-1.654)	(-3.419)	(3.446)
D*RET	0.283***	0.332***	0.152***	0.283***	0.342***	0.146***
	(14.58)	(13.26)	(5.304)	(14.58)	(13.45)	(5.374)
PMC*RET	-0.028***	-0.046***	0.005	-0.028***	-0.048***	0.001
	(-3.529)	(-4.391)	(0.380)	(-3.529)	(-4.494)	(0.071)
PMC*D*RET	0.059***	0.124***	-0.073***	0.059***	0.129***	-0.081***
	(3.387)	(5.538)	(-2.614)	(3.387)	(5.677)	(-2.929)
Country/Industry/ Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	84835	53085	31750	84835	49047	35788
Adj. R-squared	0.233	0.250	0.219	0.233	0.248	0.224

Panel B: Legal institutions=Investor Protection & Rule of Law

	Legal Institution=Investor Protection			Legal Institution=Rule of Law		
Variable	All firms	Strong	Weak	All firms	Strong	Weak
RET	-0.019*	-0.052***	0.059***	-0.019*	-0.026**	0.039
	(-1.654)	(-3.339)	(3.948)	(-1.654)	(-2.047)	(1.400)
D*RET	0.283***	0.342***	0.137***	0.283***	0.297***	0.137***
	(14.58)	(13.41)	(4.847)	(14.58)	(14.10)	(2.648)
PMC*RET	-0.028***	-0.047***	0.003	-0.028***	-0.027***	0.000
	(-3.529)	(-4.499)	(0.273)	(-3.529)	(-3.067)	(0.0244)
PMC*D*RET	0.059***	0.123***	-0.056**	0.059***	0.056***	0.004
	(3.387)	(5.435)	(-2.019)	(3.387)	(2.767)	(0.116)
Country/Industry/ Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	84835	52449	32386	84835	73234	11601
Adj. R-squared	0.233	0.249	0.224	0.233	0.229	0.240

This table presents the regression coefficients and the corresponding t-statistics from estimating equation (2) in strong- and weak-legal subsamples. Variable definitions are detailed in Appendix 1-A. For brevity, I only report the coefficients for the items important to my research questions, and the coefficients of other variables

are omitted in the tables. Other control variables include firm size, market-to-book ratio, leverage, and litigation risk. This table presents robust (clustered) t-statistics in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

Table 4 Evidences on whether the association between product market competition and accounting conservatism is nonmonotonic

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
Panel A: Strong Security Regulation					
RET	+	-0.049***	-0.109***	-0.091**	-0.041*
		(-3.184)	(-3.061)	(-2.204)	(-1.854)
D*RET	+	0.332***	0.516***	0.302***	0.278***
		(13.26)	(8.729)	(3.632)	(7.505)
PMC*RET	-	-0.046***	-0.149	-0.773***	-0.029**
		(-4.391)	(-0.666)	(-3.177)	(-1.967)
PMC*D*RET	+	0.124***	1.986***	0.282	0.065**
		(5.538)	(4.321)	(0.540)	(2.052)
Country/Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		53085	13227	11650	28208
Adj. R-squared		0.250	0.282	0.281	0.235
Panel B: Weak Security Regulation					
RET	+	0.054***	0.036*	0.039	0.063**
		(3.516)	(1.842)	(0.723)	(2.000)
D*RET	+	0.152***	0.177***	0.092	0.178***
		(5.304)	(4.330)	(0.830)	(3.033)
PMC*RET	-	0.005	-0.210	0.097	-0.012
		(0.380)	(-1.131)	(0.306)	(-0.621)
PMC*D*RET	+	-0.073***	0.764*	-0.228	-0.044
		(-2.614)	(1.884)	(-0.335)	(-1.018)
Country/Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		31750	13915	6074	11761
Adj. R-squared		0.219	0.218	0.232	0.251

Table 4 (Continued)

Panel C: Strong Public Enforcement

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
RET	+	-0.053***	-0.115***	-0.091**	-0.052**
		(-3.419)	(-2.919)	(-2.197)	(-2.357)
D*RET	+	0.342***	0.533***	0.312***	0.299***
		(13.45)	(8.214)	(3.700)	(8.071)
PMC*RET	-	-0.048***	-0.196	-0.775***	-0.037**
		(-4.494)	(-0.761)	(-3.175)	(-2.521)
PMC*D*RET	+	0.129***	2.272***	0.292	0.077**
		(5.677)	(4.417)	(0.552)	(2.476)
Country/Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		49047	11636	11194	26217
Adj. R-squared		0.248	0.280	0.279	0.233

Panel D: Weak Public Enforcement

RET	+	0.050***	0.027	0.031	0.079***
		(3.446)	(1.479)	(0.593)	(2.683)
D*RET	+	0.146***	0.180***	0.067	0.134**
		(5.374)	(4.583)	(0.636)	(2.478)
PMC*RET	-	0.001	-0.135	0.036	-0.003
		(0.0707)	(-0.821)	(0.117)	(-0.173)
PMC*D*RET	+	-0.081***	0.617*	-0.333	-0.069
		(-2.929)	(1.706)	(-0.516)	(-1.546)
Country/Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		35788	15506	6530	13752
Adj. R-squared		0.224	0.221	0.234	0.251

Table 4 (Continued)

Panel E: Strong Investor Protection

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
RET	+	-0.052***	-0.110***	-0.081*	-0.043*
		(-3.339)	(-3.039)	(-1.900)	(-1.926)
D*RET	+	0.342***	0.520***	0.291***	0.288***
		(13.41)	(8.701)	(3.427)	(7.639)
PMC*RET	-	-0.047***	-0.130	-0.707***	-0.029**
		(-4.499)	(-0.583)	(-2.813)	(-1.977)
PMC*D*RET	+	0.123***	1.898***	0.124	0.063**
		(5.435)	(4.170)	(0.232)	(1.969)
Country/Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		52449	13242	11324	27883
Adj. R-squared		0.249	0.281	0.277	0.234

Panel F: Weak Investor Protection

RET	+	0.059***	0.036*	0.023	0.067**
		(3.948)	(1.850)	(0.397)	(2.328)
D*RET	+	0.137***	0.179***	0.147	0.147***
		(4.847)	(4.413)	(1.278)	(2.653)
PMC*RET	-	0.003	-0.313*	-0.098	-0.007
		(0.273)	(-1.725)	(-0.304)	(-0.378)
PMC*D*RET	+	-0.056**	1.023**	0.230	-0.040
		(-2.019)	(2.551)	(0.330)	(-0.934)
Country/Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		32386	13900	6400	12086
Adj. R-squared		0.224	0.223	0.239	0.250

Table 4 (Continued)

Panel G: Strong Rule of Law					
Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
RET	+	-0.026**	-0.034	-0.063*	-0.026
		(-2.047)	(-1.582)	(-1.713)	(-1.197)
D*RET	+	0.297***	0.344***	0.286***	0.266***
		(14.10)	(9.364)	(3.914)	(7.460)
PMC*RET	-	-0.027***	0.057	-0.511**	-0.027**
		(-3.067)	(0.405)	(-2.343)	(-1.962)
PMC*D*RET	+	0.056***	0.932***	-0.032	0.024
		(2.767)	(3.176)	(-0.070)	(0.780)
Country/Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		73234	25448	15649	32137
Adj. R-squared		0.229	0.240	0.252	0.228
Panel H: Weak Rule of Law					
RET	+	0.039	0.087	-0.124	0.021
		(1.400)	(1.563)	(-1.480)	(0.605)
D*RET	+	0.137***	0.134	0.507**	0.163**
		(2.648)	(1.207)	(2.232)	(2.431)
PMC*RET	-	0.000	0.010	-1.063**	0.003
		(0.0244)	(0.020)	(-2.018)	(0.139)
PMC*D*RET	+	0.004	0.372	3.323**	0.005
		(0.116)	(0.303)	(2.370)	(0.103)
Country/Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		11601	1694	2075	7832
Adj. R-squared		0.240	0.284	0.309	0.250

This table presents the regression coefficients and the corresponding t-statistics from estimating equation (2) in three different groups (G1-G3) in the strong- and weak- legal institutions separately. Variable definitions are detailed in Appendix 1-A. For brevity, I only report the coefficients for the items important to my research questions, and the coefficients of other variables are omitted in the tables. Other control variables include firm size, market-to-book ratio, leverage, and litigation risk. The three groups (G1-G3) are divided according to the value of *HHI*. This table presents robust (clustered) t-statistics in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

Table 5 Evidences on how product market competition affects the association between legal institutions and accounting conservatism

Panel A: Legal Institution (LI) =Security Regulation					
Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
RET	+	-0.027*	-0.044*	-0.019	-0.035
		(-1.883)	(-1.881)	(-0.617)	(-1.583)
D*RET	+	0.316***	0.321***	0.294***	0.325***
		(12.96)	(7.769)	(5.638)	(9.010)
LI*RET	-	0.003	-0.007	0.014	0.014
		(0.478)	(-0.800)	(0.701)	(1.107)
LI*D*RET (b7)	+	-0.004	0.046*	0.022	-0.069***
		(-0.249)	(1.770)	(0.601)	(-3.022)
Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		84835	27142	17724	39969
Adj. R-squared		0.214	0.218	0.242	0.213
P-value on b7 differences between G1 and G2: 0.000, G1 and G3: 0.000, G2 and G3: 0.000					
Panel B: Legal Institution (LI) =Public Enforcement					
RET	+	-0.021	-0.059**	-0.007	-0.017
		(-1.376)	(-2.432)	(-0.195)	(-0.778)
D*RET	+	0.307***	0.318***	0.291***	0.302***
		(12.49)	(7.198)	(4.819)	(8.728)
LI*RET	-	-0.002	0.008	0.002	-0.004
		(-0.229)	(0.692)	(0.0732)	(-0.279)
LI*D*RET (b7)	+	0.035*	0.047**	0.026	-0.027*
		(1.881)	(2.339)	(0.543)	(-1.714)
Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		84835	27142	17724	39969
Adj. R-squared		0.213	0.218	0.241	0.212
P-value on b7 differences between G1 and G2: 0.008, G1 and G3: 0.012, G2 and G3: 0.004					

Table 5 (Continued)

Panel C: Legal Institution (LI) = Investor Protection					
Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
RET	+	-0.008	-0.035	0.024	-0.016
		(-0.570)	(-1.488)	(0.791)	(-0.749)
D*RET	+	0.278***	0.308***	0.261***	0.263***
		(11.56)	(7.876)	(5.186)	(7.253)
LI*RET	-	-0.014**	-0.016*	-0.028	-0.004
		(-2.055)	(-1.872)	(-1.502)	(-0.394)
LI*D*RET (b7)	+	0.035**	0.059**	0.056	-0.007
		(2.262)	(2.488)	(1.520)	(-0.298)
Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		84835	27142	17724	39969
Adj. R-squared		0.225	0.228	0.249	0.223
P-value on b7 differences between G1 and G2: 0.008, G1 and G3: 0.002, G2 and G3: 0.024					
Panel D: Legal Institution (LI) =Rule of Law					
RET	+	0.007	-0.003	0.021	0.003
		(0.462)	(-0.104)	(0.772)	(0.140)
D*RET	+	0.228***	0.256***	0.243***	0.181***
		(9.970)	(5.513)	(4.900)	(5.654)
LI*RET	-	-0.028***	-0.043***	-0.025	-0.023***
		(-3.993)	(-2.782)	(-1.523)	(-2.602)
LI*D*RET (b7)	+	0.069***	0.088**	0.062	0.065
		(4.628)	(2.488)	(1.624)	(1.552)
Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		84835	27142	17724	39969
Adj. R-squared		0.223	0.227	0.248	0.221
P-value on b7 differences between G1 and G2: 0.047, G1 and G3: 0.038, G2 and G3: 0.463					

This table presents the regression coefficients and the corresponding t-statistics from estimating equation (1) in three different groups (G1-G3). Variable definitions are detailed in Appendix 1-A. For brevity, I only report the coefficients for the items important to my research questions, and the coefficients of other variables are omitted in the tables. Other control variables include firm size, market-to-book ratio, leverage, litigation risk, and legal origin. The three groups (G1-G3) are divided according to the value of *HHI*. This table also provides the p-value on coefficient (b7) difference among the groups. This table presents robust (clustered) t-statistics in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

Table 6 Sensitivity Test - Reestimation using Ball & Shivakumar (2006) Model

Table 6.1 Sensitivity tests on the association between product market competition and accounting conservatism how it is affected by legal institutions - reestimation using Ball & Shivakumar (2006) Model

Panel A: Legal institutions=Security law & Public Enforcement

	Legal Institution=Security Law			Legal Institution=Public Enforcement		
Variable	All firms	Strong	Weak	All firms	Strong	Weak
CFO	-0.442***	-0.471***	-0.426***	-0.442***	-0.391***	-0.446***
	(-34.73)	(-16.91)	(-27.28)	(-34.73)	(-19.52)	(-24.24)
NCFO*CFO	0.341***	0.377***	0.303***	0.341***	0.322*	0.257***
	(9.698)	(6.382)	(3.211)	(9.698)	(7.731)	(2.873)
PMC*CFO	0.035	0.071**	0.041	0.035	0.092***	0.000
	(1.353)	(2.058)	(0.942)	(1.353)	(2.876)	(0.006)
PMC*NCFO*CFO	0.124*	0.221**	-0.008	0.124*	0.189**	0.046
	(1.819)	(2.393)	(-0.068)	(1.819)	(2.052)	(0.345)
Country/Industry /Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	74837	42969	31868	74837	48355	26482
Adj. R-squared	0.596	0.570	0.529	0.596	0.588	0.511

Panel B: Legal institutions=Investor Protection & Rule of Law

	Legal Institution=Investor Protection			Legal Institution=Rule of Law		
Variable	All firms	Strong	Weak	All firms	Strong	Weak
CFO	-0.442***	-0.326***	-0.470***	-0.442***	-0.433***	-0.455***
	(-34.73)	(-14.25)	(-28.93)	(-34.73)	(-31.91)	(-12.96)
NCFO*CFO	0.341***	0.318***	0.268***	0.341***	0.334***	-0.081
	(9.698)	(7.281)	(2.965)	(9.698)	(9.283)	(-0.505)
PMC*CFO	0.035	0.132*	-0.026	0.035	0.057*	0.000
	(1.353)	(1.848)	(-0.624)	(1.353)	(1.950)	(0.009)
PMC*NCFO*CFO	0.124*	0.294**	-0.009	0.124*	0.380***	-0.297
	(1.819)	(2.187)	(-0.074)	(1.819)	(3.114)	(-1.245)
Country/Industry /Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	74837	43976	30861	74837	64045	10792
Adj. R-squared	0.596	0.587	0.519	0.596	0.600	0.590

Table 6.2 Sensitivity tests on whether the association between product market competition and accounting conservatism is nonmonotonic - reestimation using Ball & Shivakumar (2006) Model

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
Panel A: Strong Security Regulation					
CFO	+	-0.471***	-0.360***	-0.215**	-0.428***
		(-16.91)	(-9.716)	(-2.232)	(-12.02)
NCFO*CFO	+	0.377***	0.486***	-0.118	0.044
		(6.382)	(6.839)	(-0.471)	(0.345)
PMC*CFO	-	0.071**	0.436	1.099*	0.009
		(2.058)	(0.620)	(1.830)	(0.206)
PMC*NCFO*CFO	+	0.221**	0.336***	-0.799	0.122
		(2.393)	(3.981)	(-1.427)	(0.849)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		42969	12958	11342	24055
Adj. R-squared		0.570	0.582	0.583	0.514
Panel B: Weak Security Regulation					
CFO	+	-0.426***	-0.469***	-0.488***	-0.373***
		(-27.28)	(-11.97)	(-3.066)	(-9.630)
NCFO*CFO	+	0.303***	0.371***	0.119	0.480
		(3.211)	(3.541)	(0.248)	(1.609)
PMC*CFO	-	0.041	-0.270	0.011	0.080
		(0.942)	(-0.373)	(0.0102)	(1.160)
PMC*NCFO*CFO	+	0.208	0.281**	-0.282	0.307
		(0.068)	(2.175)	(-0.667)	(1.580)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		31868	11911	4742	9829
Adj. R-squared		0.529	0.580	0.575	0.554

Table 6.2 (Continued)

Panel C: Strong Public Enforcement

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
CFO	+	-0.391***	-0.465***	-0.294***	-0.450***
		(-19.52)	(-9.942)	(-2.781)	(-9.683)
NCFO*CFO	+	0.322*	0.347***	0.269	0.179
		(7.731)	(5.942)	(1.081)	(1.001)
PMC*CFO	-	0.092***	1.156	0.891	-0.003
		(2.876)	(1.439)	(1.458)	(-0.0655)
PMC*NCFO*CFO	+	0.489**	0.554***	0.739*	0.176
		(2.052)	(4.818)	(1.845)	(1.198)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		48355	10843	10754	21372
Adj. R-squared		0.588	0.553	0.576	0.599

Panel D: Weak Public Enforcement

CFO	+	-0.446***	-0.452***	-0.391***	-0.380***
		(-24.24)	(-13.77)	(-2.683)	(-11.11)
NCFO*CFO	+	0.257***	0.148***	-0.203	0.412***
		(2.873)	(3.448)	(-0.433)	(4.096)
PMC*CFO	-	0.000	-0.576	0.487	0.089
		(0.006)	(-0.926)	(0.469)	(1.450)
PMC*NCFO*CFO	+	0.046	0.480**	-0.218	-0.214
		(0.345)	(1.961)	(-1.273)	(-1.197)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		26482	14026	5330	12512
Adj. R-squared		0.511	0.251	0.256	0.228

Table 6.2 (Continued)

Panel E: Strong Investor Protection

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
CFO	+	-0.326***	-0.232***	-0.190*	-0.415***
		(-14.25)	(-5.165)	(-1.803)	(-10.99)
NCFO*CFO	+	0.318***	0.444***	-0.442	0.054
		(7.281)	(5.289)	(-1.544)	(0.383)
PMC*CFO	-	0.132*	1.393*	1.087*	0.023
		(1.848)	(1.776)	(1.701)	(0.475)
PMC*NCFO*CFO	+	0.294**	0.512***	-0.656	0.117
		(2.187)	(4.810)	(-1.291)	(0.798)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		43976	10863	10505	22608
Adj. R-squared		0.587	0.584	0.585	0.611

Panel F: Weak Investor Protection

CFO	+	-0.470***	-0.514***	-0.453***	-0.399***
		(-28.93)	(-15.45)	(-3.469)	(-11.39)
NCFO*CFO	+	0.268***	0.275***	0.028	0.405***
		(2.965)	(2.923)	(0.0678)	(4.009)
PMC*CFO	-	-0.026	-0.983	0.276	0.047
		(-0.624)	(-1.575)	(0.299)	(0.797)
PMC*NCFO*CFO	+	-0.009	0.435*	-0.319	0.136
		(-0.074)	(1.960)	(-1.123)	(0.744)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		30861	14006	5579	11276
Adj. R-squared		0.519	0.237	0.267	0.215

Table 6.2 (Continued)

Panel G: Strong Rule of Law					
Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
CFO	+	-0.433***	-0.451***	-0.340***	-0.422***
		(-31.91)	(-16.75)	(-4.174)	(-15.11)
NCFO*CFO	+	0.334***	0.363***	0.050	0.405*
		(9.283)	(5.910)	(0.283)	(1.704)
PMC*CFO	-	0.057*	-0.394	0.832	0.017
		(1.950)	(-0.806)	(1.475)	(0.408)
PMC*NCFO*CFO	+	0.380***	0.349***	-2.410**	0.196*
		(3.114)	(4.362)	(-2.069)	(1.745)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		64045	22827	14259	26959
Adj. R-squared		0.600	0.222	0.195	0.207
Panel H: Weak Rule of Law					
CFO	+	-0.455***	-0.455***	-0.339	-0.435***
		(-12.96)	(-5.051)	(-1.611)	(-8.428)
NCFO*CFO	+	-0.081	0.360*	-0.893	-0.230
		(-0.505)	(1.890)	(-1.133)	(-0.962)
PMC*CFO	-	0.000	0.981	1.292	0.018
		(0.009)	(0.593)	(0.970)	(0.251)
PMC*NCFO*CFO	+	-0.297	0.253*	-0.385	-0.570**
		(-1.245)	(1.868)	(-0.936)	(-2.061)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		10792	2042	1825	6925
Adj. R-squared		0.590	0.338	0.344	0.296

This table presents the regression coefficients and the corresponding t-statistics from estimating equation (3). Variable definitions are detailed in Appendix 1-A. For brevity, I only report the coefficients for the items important to my research questions, and the coefficients of other variables are omitted in the tables. Other control variables include firm size, market-to-book ratio, leverage, and litigation risk. The three groups (G1-G3) are divided according to the value of *HHI*. This table presents robust (clustered) t-statistics in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

Table 6.3 Sensitivity tests on how product market competition affects the association between legal institutions and accounting conservatism - reestimation using Ball & Shivakumar (2006) Model

Panel A: Legal Institution (LI) =Security Regulation

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
CFO	-	-0.459***	-0.443***	-0.513***	-0.449***
		(-32.97)	(-20.76)	(-17.62)	(-20.87)
NCFO*CFO	+	0.347***	0.410***	0.431***	0.373***
		(10.04)	(7.197)	(5.823)	(4.543)
LI*CFO	-	0.038*	0.055*	0.122**	0.009
		(1.756)	(1.662)	(2.202)	(0.278)
LI*NCFO*CFO	+	0.343***	0.425***	-0.297	-0.354
		(3.510)	(4.143)	(-1.451)	(-1.428)
Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		74837	24869	16084	33884
Adj. R-squared		0.596	0.616	0.695	0.607

Panel B: Legal Institution (LI) =Public Enforcement

CFO	-	-0.441***	-0.417***	-0.474***	-0.440***
		(-36.82)	(-23.49)	(-17.22)	(-23.58)
NCFO*CFO	+	0.288***	0.376***	0.346***	0.322***
		(8.810)	(8.218)	(6.653)	(3.786)
LI*CFO	-	-0.020	-0.100**	0.042	0.013
		(-0.774)	(-2.380)	(0.664)	(0.415)
LI*NCFO*CFO	+	0.238	0.246**	0.205	-0.204**
		(1.515)	(3.098)	(1.164)	(-2.153)
Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		74837	24869	16084	33884
Adj. R-squared		0.596	0.617	0.685	0.603

Table 6.1 (Continued)

Panel C: Legal Institution (LI) = Investor Protection					
Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
CFO	-	-0.468***	-0.469***	-0.492***	-0.451***
		(-37.20)	(-25.31)	(-19.11)	(-22.50)
NCFO*CFO	+	0.336***	0.285***	0.383***	0.348***
		(10.36)	(8.554)	(5.493)	(5.200)
LI*CFO	-	0.079***	0.146***	0.065	0.028
		(4.002)	(4.537)	(1.379)	(1.038)
LI*NCFO*CFO	+	0.262***	0.527***	0.121	0.213
		(3.513)	(3.724)	(-0.565)	(1.271)
Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		74837	24869	16084	33884
Adj. R-squared		0.596	0.617	0.695	0.605
Panel D: Legal Institution (LI) =Rule of Law					
CFO	-	-0.451***	-0.453***	-0.506***	-0.419***
		(-22.75)	(-11.39)	(-7.81)	(-6.54)
NCFO*CFO	+	0.258***	0.317***	0.234*	0.254*
		(3.577)	(9.423)	(1.812)	(1.681)
LI*CFO	-	0.005	0.019	0.037	-0.024
		(0.237)	(0.482)	(0.963)	(-0.973)
LI*NCFO*CFO	+	0.386***	0.419***	0.314	0.295
		(5.423)	(7.011)	(1.420)	(0.624)
Industry/Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		74837	24869	16084	33884
Adj. R-squared		0.607	0.619	0.604	0.619

Table 7 Sensitivity Test – Including other measures of product market competition
Table 7.1 Sensitivity tests on the association between product market competition and accounting conservatism and how it is affected by legal institutions – including other measures of product market competition

Panel A: Legal institutions=Security law & Public Enforcement

	Legal Institution=Security Law			Legal Institution=Public Enforcement		
Variable	All firms	Strong	Weak	All firms	Strong	Weak
DIFF*D*RET	0.026	-0.005	0.014	0.026	-0.006	0.016
	(1.481)	(-0.206)	(0.421)	(1.481)	(-0.232)	(0.462)
MKTSIZE*D*RET	0.013***	0.014**	-0.003	0.013***	0.011*	-0.006
	(2.986)	(2.195)	(-0.497)	(2.986)	(1.785)	(-0.911)
ENTCOST*D*RET	-0.014***	-0.016***	-0.004	-0.014***	-0.015**	-0.003
	(-3.291)	(-2.625)	(-0.646)	(-3.291)	(-2.401)	(-0.444)
PMC*D*RET	0.078***	0.110***	-0.026	0.078***	0.110***	-0.029
	(3.315)	(3.689)	(-0.704)	(3.315)	(3.559)	(-0.808)
Country/Industry /Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	60250	37937	22313	60250	35680	24570
Adj. R-squared	0.214	0.232	0.204	0.214	0.228	0.213

Panel B: Legal institutions=Investor Protection & Rule of Law

	Legal Institution=Investor Protection			Legal Institution=Rule of Law		
Variable	All firms	Strong	Weak	All firms	Strong	Weak
DIFF*D*RET	0.026	-0.008	0.014	0.026	0.029	-0.020
	(1.481)	(-0.275)	(0.433)	(1.481)	(1.624)	(-0.345)
MKTSIZE*D*RET	0.013***	0.015**	0.001	0.013***	0.018***	0.003
	(2.986)	(2.170)	(0.194)	(2.986)	(3.513)	(0.318)
ENTCOST*D*RET	-0.014***	-0.015**	-0.007	-0.014***	-0.017***	-0.008
	(-3.291)	(-2.285)	(-1.050)	(-3.291)	(-3.442)	(-0.838)
PMC*D*RET	0.078***	0.121***	-0.031	0.078***	0.083***	-0.006
	(3.315)	(3.920)	(-0.882)	(3.315)	(3.065)	(-0.121)
Country/Industry /Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	60250	35512	24738	60250	50056	10194
Adj. R-squared	0.214	0.235	0.204	0.214	0.217	0.211

Table 7.2 Sensitivity tests on whether the association between product market competition and accounting conservatism is nonmonotonic – including other measures of product market competition

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
Panel A: Strong Security Regulation					
DIFF*D*RET	+	-0.005	-0.171***	-0.251**	0.050
		(-0.206)	(-2.817)	(-2.540)	(1.255)
MKTSIZE*D*RET	+	0.014**	0.021*	0.020	0.006
		(2.195)	(1.943)	(1.532)	(0.612)
ENTCOST*D*RET	-	-0.016***	-0.034***	-0.030**	-0.001
		(-2.625)	(-3.204)	(-2.390)	(-0.0939)
PMC*D*RET	+	0.110***	1.613***	-0.395	0.039
		(3.689)	(3.107)	(-0.706)	(0.899)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		37937	11154	8474	18309
Adj. R-squared		0.232	0.278	0.274	0.215
Panel B: Weak Security Regulation					
DIFF*D*RET	+	-0.014	-0.164*	-0.472	0.102
		(-0.421)	(-1.967)	(-1.111)	(0.744)
MKTSIZE*D*RET	+	0.003	0.016	0.021	-0.011
		(0.497)	(1.403)	(1.277)	(-1.111)
ENTCOST*D*RET	-	-0.004	-0.027*	-0.010	0.009
		(-0.646)	(-1.997)	(-0.567)	(0.824)
PMC*D*RET	+	-0.026	1.021**	1.046	-0.023
		(-0.704)	(2.049)	(1.279)	(-0.444)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		22313	8926	4752	8635
Adj. R-squared		0.204	0.220	0.210	0.241

Table 7.2 (Continued)

Panel C: Strong Public Enforcement

Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
DIFF*D*RET	+	-0.006	-0.191***	-0.255**	0.038
		(-0.232)	(-2.980)	(-2.526)	(1.087)
MKTSIZE*D*RET	+	0.011*	0.025**	0.015	0.005
		(1.785)	(2.071)	(1.061)	(0.515)
ENTCOST*D*RET	-	-0.015**	-0.039***	-0.030**	-0.001
		(-2.401)	(-3.322)	(-2.148)	(-0.154)
PMC*D*RET	+	0.110***	2.148***	-0.232	0.046
		(3.559)	(3.605)	(-0.408)	(1.058)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		35680	9988	8195	17497
Adj. R-squared		0.228	0.273	0.272	0.214

Panel D: Weak Public Enforcement

DIFF*D*RET	+	0.016	-0.191*	0.317	0.005
		(0.462)	(-1.808)	(1.550)	(0.135)
MKTSIZE*D*RET	+	0.006	0.015*	0.009	-0.013
		(0.911)	(1.880)	(0.652)	(-1.213)
ENTCOST*D*RET	-	-0.003	-0.024	-0.005	0.010
		(-0.444)	(-1.394)	(-0.325)	(0.981)
PMC*D*RET	+	-0.029	0.807*	0.782	-0.023
		(-0.808)	(1.747)	(0.992)	(-0.431)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		24570	10092	5031	9447
Adj. R-squared		0.213	0.226	0.209	0.242

Table 7.2 (Continued)

Panel E: Strong Investor Protection					
Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
DIFF*D*RET	+	-0.008	-0.225***	-0.252**	0.049
		(-0.275)	(-3.677)	(-2.562)	(1.146)
MKTSIZE*D*RET	+	0.015**	0.024**	0.022	0.009
		(2.170)	(2.046)	(1.631)	(0.929)
ENTCOST*D*RET	-	-0.015**	-0.036***	-0.032**	-0.002
		(-2.285)	(-3.027)	(-2.500)	(-0.180)
PMC*D*RET	+	0.121***	2.304***	-0.465	0.045
		(3.920)	(4.110)	(-0.798)	(1.018)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		35512	10080	7925	17507
Adj. R-squared		0.235	0.290	0.272	0.218
Panel F: Weak Investor Protection					
DIFF*D*RET	+	-0.014	0.057	-0.279	0.003
		(-0.433)	(0.365)	(-1.506)	(0.082)
MKTSIZE*D*RET	+	0.001	0.007	0.018	-0.004
		(0.194)	(0.668)	(1.187)	(-0.429)
ENTCOST*D*RET	-	-0.007	-0.027*	-0.012	0.002
		(-1.050)	(-1.704)	(-0.749)	(0.227)
PMC*D*RET	+	-0.031	0.925**	1.256*	-0.040
		(-0.882)	(1.982)	(1.649)	(-0.805)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		24738	10012	5301	9425
Adj. R-squared		0.204	0.216	0.216	0.231

Table 7.2 (Continued)

Panel G: Strong Rule of Law					
Variable	Sign	All firms	Competitive Industries	Moderately Concentrated industries	Highly concentrated industries
DIFF*D*RET	+	0.029	-0.115**	-0.184**	0.049**
		(1.624)	(-1.967)	(-2.188)	(2.498)
MKTSIZE*D*RET	+	-0.018***	-0.016**	-0.025**	-0.017**
		(-3.513)	(-2.025)	(-2.275)	(-2.067)
ENTCOST*D*RET	-	0.017***	0.021***	0.033***	0.010
		(3.442)	(2.623)	(3.035)	(1.264)
PMC*D*RET	+	0.083***	1.221***	-0.650	0.024
		(3.065)	(3.302)	(-1.294)	(0.614)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		50056	17813	11494	20749
Adj. R-squared		0.217	0.239	0.239	0.221
Panel H: Weak Rule of Law					
DIFF*D*RET	+	-0.020	-0.045	-0.236	-0.041
		(-0.345)	(-0.263)	(-0.701)	(-0.632)
MKTSIZE*D*RET	+	0.003	-0.004	0.018	0.006
		(0.318)	(-0.199)	(0.441)	(0.397)
ENTCOST*D*RET	-	-0.008	0.012*	0.009	-0.018
		(-0.838)	(1.711)	(0.259)	(-1.333)
PMC*D*RET	+	-0.006	0.156**	3.226**	-0.014
		(-0.121)	(2.240)	(2.249)	(-0.222)
Country/Industry /Year fixed effects		Yes	Yes	Yes	Yes
No. of Obs.		10194	2267	1732	6195
Adj. R-squared		0.211	0.316	0.309	0.214

This table presents the regression coefficients and the corresponding t-statistics from replicating the empirical tests in Table 4 and Table 5 by including three dimensions of product market competition proposed by Karuna (2007) in the regressions. Variable definitions are detailed in Appendix 1-A. For brevity, I only report the coefficients for the items important to my research questions, and the coefficients of other variables are omitted in the tables. The three groups (G1-G3) are divided according to the value of *HHI*. This table presents robust (clustered) t-statistics in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

Chapter Two: Ownership Structure, Legal Institutions and Accounting Conservatism

2.1 Introduction

Accounting conservatism is an important research topic because it is regarded as an important tool to improve contracting efficiency and assuage agency problems (Watts 2003). Recently, many studies empirically investigate how accounting conservatism is applied to assuage agency problems (Ahmed, et al. 2002, Ahmed and Duellman 2007, Lafond and Roychowdhury 2008, LaFond and Watts 2008, Wang 2006, Zhang 2008). In the ultimate ownership literature, prior studies reveal the wedge between controlling shareholder's control rights and cash-flow rights (wedge hereafter) create agency problem between minority and majority shareholders(Claessens, Djankov, Fan and Lang 2002, Claessens, Djankov and Lang 2000, Faccio and Lang 2002). Moreover, Laeven and Levine (2008) document the popularity of firms controlled by multiple large shareholders and significant effects of dispersion of cash-flow rights across multiple large owners (dispersion of cash-flow rights hereafter) on agency costs and thus firm valuation. Based on the above studies, this paper attempts to extend prior literature by focusing on three research questions. First, how does the ownership structure characterized by a wedge between controlling shareholders' control rights and cash-flow rights affect the use of accounting conservatism? Second, how does the ownership structure characterized by a dispersion of cash-flow rights affect the use of accounting conservatism? Finally, do the impacts of wedge and dispersion of cash-flow rights on accounting conservatism vary with legal institutions?

Prior corporate governance literature identifies three different kinds of ownership structures: (1) 100 percent small shareholders, (2) one large controlling owner combined with many small shareholders, and (3) multiple large shareholders combined with many other small shareholders. In the first case, managers may behave opportunistically and divert corporate resources for private benefits (Grossman and Hart 1980, Jensen and Meckling 1976). In the second case, the large shareholder acts to assuage the interest conflicts between managers and shareholders, but it creates agency problem between controlling owner and minority shareholders as stressed by Shleifer and Vishny (1986), La Porta, Lopez-de-Silanes and Shleifer (1999), and others. While in the last case, multiple large shareholders could either cross-monitor each other or organize coalition to extract private benefits together. Many prior studies have investigated how the manager-shareholder conflicts drive the use of accounting conservatism, while this paper focuses on agency problems driven by the conflicts between majority and minority shareholders.

The separation of cash-flow rights from voting rights is pervasive around the world (Claessens, et al. 2000, Faccio and Lang 2002, La Porta, et al. 1999). In firms with concentrated ownership, the primary agency problem arises from interest conflicts between minority shareholders and controlling owners who directly manage the firm or internalize the benefits from monitoring managers and who possess more control rights than cash flow rights. A smaller fraction of the firm's cash flow rights relative to control rights fails to align the controller's incentives with those of minority shareholders. As a result, controlling owners have both incentives and the ability to enjoy private control benefits[16] that are not

[16] For example, perquisite consumption, empire building, excessive managerial pay, appropriation of the firm's opportunities and assets, and outright theft.

shared by minority shareholders in proportion to the shares they owned. Recognizing the risk of being expropriated by insiders, minority shareholders will react to the behavior of the controlling shareholder by discounting the valuation of the firm (Cheung, Rau and Stouraitis 2006, Claessens, et al. 2002, Lemmon and Lins 2003).

Laeven and Levine (2008) find that one-third of publicly listed firms in Western Europe are controlled by multiple owners, stressing the importance of complex ownership structure involving multiple large shareholders[17]. Moreover, they document a negative relationship between corporate valuations and the dispersion of cash-flow rights. Theoretically, Bennedsen and Wolfenzon (2000) demonstrate that when cash-flow rights are distributed unevenly across large shareholders, the likelihood of a winning coalition with small cash-flow rights would be increased, leading to higher agency costs and lower firm value. Pagano and Roell (1998) argue that multiple large shareholders would cross-monitor each other, reducing agency costs and enhancing firm valuation. Furthermore, cross-monitoring among large shareholders suggested by Pagano and Roell (1998) is less likely to happen when cash-flow rights are unevenly distributed among controlling owners (Bloch and Hege 2001). This indicates that the association between cash-flow rights dispersion and agency costs is positive. In sum, these studies indicate that dispersion of cash-flow rights positively related to agency costs and negatively related to firm valuation.

The above discussion indicates that both wedge and dispersion of cash-flow rights are associated with more serious agency problems and that minority shareholders are aware of the risk of expropriation by controlling owners and respond rationally. Extant literature identifies accounting conservatism as a tool to improve contracting efficiency and

17 In the U.S., Gomes and Novaes (1999) point out that 57.2% of the closely held corporations listed in the National Survey of Small Business Finances (NSSBF) with annual sales above 10 million dollars have more than one large shareholder.

governance firm insiders (Holthausen and Watts 2001, Watts 2003). For example, LaFond and Roychowdhury (2008) document that the agency problem between managers and shareholders could drive the use of accounting conservatism. Similarly, LaFond and Watts (2008) argue that agency problems induced by information asymmetry between firm insiders and outside equity investors drive the use of accounting conservatism in financial statements. In another study, Ahmed, et al. (2002) find that firms that face more severe conflicts between shareholders and bondholders tend to use more conservative accounting. Furthermore, Ahmed and Duellman (2007) argue that accounting conservatism could assist directors to reduce agency costs of firms. Based on these results, I expect that the agency problem induced by the wedge between control rights or the dispersion of cash-flow rights could drive higher demand for accounting conservatism from outsiders (both minority shareholders and debtholders). At the same time, insiders also have incentive to increase firm value and lower the cost of financing through satisfying the demand from outsiders. From this aspect, wedge and dispersion of cash-flow rights are expected to be positively associated with accounting conservatism. However, controlling shareholders of firms with wedge or dispersion of cash-flow rights possess incentives and ability to extract private benefits. Therefore, the desire to avoid external monitoring and loss of reputation induces insiders to mask their appropriation or tunneling behavior by managing, especially favorably biasing, reported accounting income (Haw, Hu, Hwang and Wu 2004, Leuz, Nanda and Wysocki 2003). As a result, the demand for higher accounting conservatism from outsiders can be attenuated by the insiders' incentive to mask appropriation or tunneling behaviors and hence supply less conservatism. Overall, the analysis above provides competing and alternative predictions about the effects of wedge and dispersion of cash-flow rights on accounting conservatism. Since prior studies generally find that the effects from demand side (to assuage agency problems) dominate those from supply

side (to hide misbehaviors) (Ahmed, et al. 2002, Lafond and Roychowdhury 2008, LaFond and Watts 2008), I predict that both wedge and dispersion of cash-flow rights are positively associated with accounting conservatism.

Legal institutions could influence the relation between ownership structure and accounting conservatism in two ways. On the one hand, legal institutions could affect the demand and supply of firm-level corporate governance mechanisms (Doidge, Karolyi and Stulz 2007). Firms cost more to launch better governance mechanisms (including creating conservative accounting and building reputation for accounting conservatism) and benefit less from doing so in countries with weak legal institutions. In line of this logic, insiders of these firms have limited (strengthened) incentive to supply accounting conservatism in weak (strong) legal institutions. Recognizing the incentives of the insiders, outsiders (both minority shareholders and debtholders) in weak legal institutions would be less likely to trust the effectiveness of governance mechanisms set up by the insiders and thus rely less on corporate governance when encountering agency problems, leading to a lower demand for corporate governance in these countries. Therefore, legal institutions impact on both demand and supply of corporate governance, including accounting conservatism. From this aspect, legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism.

On the other hand, well-functioning legal institutions limit insiders' private control benefits by making wealth expropriation legally riskier and more expensive (La Porta, Lopez-de-Silanes, Shleifer and Vishny 2000, Nenova 2003). This occurs because the likelihood of being revealed and sued reduces the incentives and capacities of controlling owners to extract private control benefits. Thus, the behavior of managing, especially favorably biasing, reported accounting income in response to control divergence and dispersion of cash-flow

rights is likely to be reduced when investors are protected by strong legal institutions (Bushman and Piotroski 2006, Haw, et al. 2004). However, it is also possible that the demand for accounting conservatism from outsiders is attenuated by the strong legal institutions, because the risk of expropriation by insiders is lowered. Therefore, from this aspect, whether legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism depends on which effects dominate. Overall, based on the above discussion, I predict that legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism.

In this paper, I use the Basu's (1997) methodology to capture the extent of accounting conservatism. Using a comprehensive, firm-level ownership dataset for thirteen Western European countries, I provide evidence that accounting conservatism is positively associated with wedge and dispersion of cash-flow rights after controlling for the level of cash-flow rights held by the largest shareholder and other determinants of accounting conservatism. Moreover, the documented positive associations generally exist in strong legal institutions (proxied by shareholder rights, investor protection, and judiciary efficiency), indicating the importance of legal institutions in influencing the demand and supply of accounting conservatism. All these findings are robust to various sensitivity checks. These results are consistent with minority shareholders and bondholders demanding more accounting conservatism when the risk of insider expropriation is higher. The association between wedge/dispersion of cash-flow rights and accounting conservatism is insignificant in countries with weak legal institutions, supporting the notion that it is costly to launch firm-specific governance mechanisms and build reputation in these countries.

This study is different from previous studies in several aspects. LaFond and Roychowdhury (2008) document that accounting conservatism increases with the severity of the agency problem between managers and shareholders. Ahmed, et al. (2002) document that

firms that face more severe conflicts between shareholders and bondholders tend to use more conservative accounting. Distinct from the above studies, this study investigates the roles of accounting conservatism in mitigating the agency problem between majority shareholders and outsiders (including minority shareholders and debtholders). Secondly, in a closely related work, Haw et al. (2004) provide evidence of income management induced by the detachment of control rights from cash-flow rights of ultimate owners. One limitation of this study is that it only focuses on the react of managers to the expropriation behavior (e.g. increase the opacity of the firm) while neglects that of outsiders (e.g. increasing demand on information quality). Moreover, the consequence of ultimate ownership they investigate is earnings management proxied by the absolute value of discretionary accruals, which could also be used to signal private information (Subramanyam 1996). This essay directly examines the impact of ownership structure on one of the most important accounting choices – the level of accounting conservatism. Finally, this study explores the effects of the multiple large shareholders, in contrast to previous studies that have focused on the influences of the largest shareholder. This helps advance our understanding of the effects of ultimate ownership structure.

This essay contributes to the extant literature in a number of ways. Firstly, it adds to the growing body of literature on the role of accounting conservatism in mitigating agency problems. The existing literature document that accounting conservatism helps mitigate the manager-shareholder and debtholder-shareholder conflicts, while this study stresses the role of accounting conservatism in alleviating another kind of agency problem: interest conflicts between majority shareholders and outsiders (both minority shareholders and debtholders).

Secondly, this study highlights the importance of the multiple large shareholders in affecting the level of accounting conservatism. Previous studies on accounting consequences of ownership structure generally neglect the effects of multiple large shareholders. Prior finance and economics literature reveal that multiple large owners could either cross-monitor or build

coalition and affect the firm's agency costs and valuation, suggesting that it is important to study the behavior of multiple large shareholders (Bennedsen and Wolfenzon 2000, Bloch and Hege 2001, Laeven and Levine 2008, Pagano and Roell 1998). To my knowledge, this study is the first to investigate the effects of the distribution of cash-flow rights among multiple large shareholders on accounting conservatism.

Thirdly, this essay reinforces the important role played by legal institutions in influencing the installation of firm-level corporate governance mechanisms. The findings of this paper are consistent with the argument that legal institutions are important in determining the costs and benefits of launching firm-level governance mechanisms.

Finally, the findings of this study have important implications for accounting standard setters attempting to eliminate conservatism in financial reports. My finding that accounting conservatism increases with interest conflicts between minority shareholders and insiders implies that accounting conservatism is a useful tool to assuage such interest conflicts. This finding reminds standard setters to take caution when they attempt to eliminate accounting conservatism.

The remainder of this essay is organized as follows. Section 2.2 reviews the literature and develops the research hypotheses. Section 2.3 specifies the research designs. Section 2.4 describes sample and provides descriptive statistics. Empirical results are presented in Section 2.5. Section 2.6 reports robustness checks and Section 2.7 concludes. Appendix 2-A includes a description of all empirical variables and their sources.

2.2 Literature Review and Hypothesis Development

2.2.1 Accounting Conservatism

Accounting conservatism is widely accepted as a tool to improve contracting efficiency and governance firm insiders (Holthausen and Watts 2001, Watts 2003). For example, when the severity of agency problems between managers and shareholders increases, managers would select higher level of accounting conservatism to lower the agency costs (Lafond and Roychowdhury 2008). Ahmed and Duellman (2007) argue that accounting conservatism could assist directors to reduce agency costs of firms. In another study, Ahmed, et al. (2002) document that firms that face more severe conflicts between shareholders and bondholders tend to use more conservative accounting. Moreover, LaFond and Watts (2008) argue that agency problems induced by information asymmetry between firm insiders and outside equity investors drive the use of accounting conservatism in financial statements. The findings of the above studies indicate that accounting conservatism plays an important role in mitigating agency problems between insiders (such as managers and controlling shareholders) and outsiders (such as minority shareholders and debtholders). Below, I briefly discuss how accounting conservatism functions in reducing agency costs.

According to the agency theory, insiders possess more information than outsiders as well as motivations to favorably bias the information they supply to outsiders and take actions (such as asset substitution, consumption of perquisites, and empire building) that result in deadweight losses (Jensen and Meckling 1976). By requiring higher verification standards for recognition of gains, accounting conservatism reduces managers' ability and incentives to withhold information on expected losses, inflate earnings or overstate net

assets (Ahmed, et al. 2002, Holthausen and Watts 2001, Watts and Zimmerman 1986, Watts 2003). Therefore, accounting conservatism could improve contracting efficiency and eventually increase firm value.

Accounting conservatism is also regarded as an important corporate governance mechanism in monitoring insiders (Bushman, et al. 2007, Watts 2003). Bushman et al. (2007) argue that conservatism facilitates identifying negative NPV projects or poorly performing investments, thus helping to improve investment efficiency. Therefore, accounting conservatism helps effectively oversee the managers, limit deadweight losses from poor investment decisions, and increase firm valuation. In addition, conservatism could also remind debtholders of the possible unfavorable situation earlier and help them make liquidation decisions correctly (Li 2009, Zhang 2008). Based on the above discussions, accounting conservatism functions as a monitoring mechanism of insiders, and is an important feature of corporate governance (Ball, et al. 2000).

Finally, accounting conservatism could also improve the accuracy of information provided by insiders and enhance the welfare of accounting information users. Fan and Zhang (2007) argue that, information originator's expected payoff decreases with a conservative accounting system, because she prefers to be classified into the favorable state of affairs. Such a decrease, however, is lower when the underlying information signal is more precise. Therefore, an increased level of accounting conservatism promotes the information producer's motivation to offer accurate information. Similarly, Chen, Hemmer, and Zhang (2007) argue that imposing a conservative noise on the accounting system dampens manager's incentive to optimistically bias earnings. Overall, prior studies indicate that accounting conservatism motivates insiders to provide accurate accounting information.

The above discussion suggests that accounting information helps mitigate the agency problem between insiders and outsiders. To my knowledge, there is no study investigating whether accounting conservatism is applied to assuage the agency problem between controlling shareholders (including both the largest owner and the second largest owner) and outsiders (including both minority shareholders and debtholders). In particular, I empirically explore three research questions. Firstly, how does wedge affect the use of accounting conservatism? Secondly, how does dispersion of cash-flow rights affect the use of accounting conservatism? Thirdly, do the impacts of wedge and dispersion of cash-flow rights on accounting conservatism vary with legal institutions?

2.2.2 Ownership structure and Accounting Conservatism

This study concentrates on two important dimensions of ownership structure: wedge between control rights and cash-flow rights and dispersion of cash-flow rights between the two largest shareholders. Concentrated ownership characterized by the detachment of cash flow rights from voting rights is the most common form of ownership structure in listed corporations around the world (Claessens, et al. 2000, Faccio and Lang 2002, La Porta, et al. 1999). Recent study indicates that even in the U.S., the corporate ownership is concentrated (Holderness 2009). Furthermore, prior studies also reveal the popularity of complex ownership structure involving multiple large owners (Gomes and Novaes 1999, Laeven and Levine 2008). Recently, Laeven and Levine (2008) document that one-third of publicly listed firms in Western Europe are controlled by more than one controlling shareholder, stressing the importance of complex ownership structure involving multiple large owners.

Therefore, it is important to investigate how the two important dimensions of ownership structure – wedge and dispersion of cash-flow rights – shape accounting conservatism.

In firms with wedge, the primary agency problem arises from conflicts of interest between minority shareholders and controlling owners who directly manage the firm or internalizes the benefits from monitoring managers and who frequently possess more control rights than cash-flow rights. Large shareholders have incentives to maximize their own benefits at the cost of other shareholders (Shleifer and Vishny 1986). A smaller fraction of the firm's cash-flow rights relative to control rights fails to align controller's incentives with those of minority shareholders. Therefore, when wedge exists, controlling owners possess incentives and the ability to extract private control benefits (e.g., perquisite consumption, excessive managerial pay, appropriation of the firm's opportunities and assets, and outright theft) that are not shared by minority shareholders in proportion to the shares they owned. Knowing the incentives of insiders, minority shareholders will react to the behavior of insiders by discounting the valuation of the firm (Cheung, et al. 2006, Claessens, et al. 2002, Lemmon and Lins 2003). In sum, wedge is expected to be positively associated with agency costs caused by the conflicts between insiders and outsiders.

Dispersion of cash-flow rights also affects agency costs and firm valuation. Bennedsen and Wolfenzon (2000) argue that in equilibrium the association between corporate valuation and dispersion of cash-flow rights should be negative. The logics behind their predictions are: (1) incentives to expropriate corporate resources for private gain are lower for ruling coalitions with high cash-flow rights because of alignment effects (2) ruling coalitions with high cash-flow rights are less likely to form when the dispersion of cash-flow rights is high. Therefore, Bennedsen and Wolfenzon (2000) conclude that when cash-flow rights are distributed unevenly across large shareholders, the likelihood of a winning coalition with

small cash-flow rights would be increased, leading to higher agency costs and lower firm value. Pagano and Roell (1998) argue that multiple large shareholders would cross-monitor each other, reducing agency costs and enhancing firm valuation. Bloch and Hege (2001) further show that cross-monitoring is less likely when cash-flow rights are unevenly distributed, which indicates a positive association between cash-flow rights dispersion and agency costs. Recently, Laeven and Levine (2008) document a negative relationship between corporate valuation and dispersion of cash-flow rights, consistent with the predictions of prior theoretical models. Overall, the above studies indicate that, similar to wedge, dispersion of cash-flow rights is expected to be positively associated with agency costs caused by the interest conflicts between insiders and outsiders.

Extant literature suggests that accounting conservatism helps mitigate the agency problem between insiders and outsiders. For example, LaFond and Roychowdhury (2008) document that the agency problem between managers and shareholders could drive the use of accounting conservatism. In another study, Ahmed, et al. (2002) find that firms that face more severe conflicts between shareholders and bondholders tend to use more conservative accounting. Furthermore, Ahmed and Duellman (2007) argue that accounting conservatism could assist directors to reduce agency costs of firms, and LaFond and Watts (2008) suggest that information asymmetry between firm insiders and outside equity investors generates accounting conservatism in financial statements. Based on prior studies, I expect the agency problem induced by wedge and dispersion of cash-flow rights could drive higher demand for accounting conservatism from outsiders (both minority shareholders and debtholders). While insiders have incentive to enhance the firm value and lower the cost of financing through satisfying the outsiders' demand for accounting conservatism. From this

aspect, both wedge and dispersion of cash-flow rights are expected to be positively associated with accounting conservatism.

While the above arguments are intuitively appealing and point to a positive association between wedge/dispersion of cash-flow rights and accounting conservatism, there are contrary views on these relations. For firms with greater wedge or dispersion of cash-flow rights, controlling shareholders possess incentives and ability to extract private benefits. The desire to avoid external monitoring and loss of reputation induces insiders to mask their appropriation or tunneling behavior by managing, especially favorably biasing, reported accounting income (Haw, et al. 2004, Leuz, et al. 2003). Therefore, the effects of outsiders' demand for higher accounting conservatism can be attenuated by the insiders' incentive to mask appropriation or tunneling behavior.

Overall, existing arguments provide competing and alternative predictions about the effects of wedge/cash-flow dispersion on accounting conservatism. However, since prior studies generally find that the effects from demand side (to assuage agency problems) dominate those from supply side (to hide misbehaviors) (Ahmed, et al. 2002, LaFond and Roychowdhury 2008, LaFond and Watts 2008), I predict that both wedge and dispersion of cash-flow rights are positively associated with accounting conservatism. Therefore, I get the following hypotheses:

H1a: Accounting conservatism is positively related to wedge, *ceteris paribus*.

H1b: Accounting conservatism is positively related to dispersion of cash-flow rights, *ceteris paribus*.

2.2.3 The Effects of Legal Institutions on the Relation between Ownership Structure and Accounting Conservatism

Well-functioning legal institutions affect the cost-and-benefit of setting firm-level governance mechanisms and help limit the expropriation behavior of the insiders. Thus, legal institutions could influence the relationship between ownership structure and accounting conservatism. On the one hand, legal institutions could affect the demand and supply of firm-level corporate governance mechanism (Doidge, et al. 2007). Firms cost more to launch better corporate governance (including building reputation for accounting conservatism) and benefit less from doing so in countries with weak legal institutions. In this case, insiders of these firms have limited incentive to supply accounting conservatism. Recognizing the incentives of the insiders, outsiders (both minority shareholders and debtholders) in weak legal institutions would be less likely to trust the effectiveness of governance mechanisms set up by the insiders and thus rely less on corporate governance when encountering agency problems, leading to a lower demand for corporate governance in these countries. Therefore, legal institutions affect both the supply and demand of corporate governance, including accounting conservatism, driven by agency problems. From this aspect, legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism.

On the other hand, well-functioning legal institutions limit insiders' private control benefits by making wealth expropriation legally riskier and more expensive (La Porta, et al. 2000, Nenova 2003). This occurs because the likelihood of being revealed and sued reduces the incentives and capacities of controlling owners to extract private control benefits. Thus, the

behavior of managing, especially favorably biasing, reported accounting income in response to control wedge and dispersion of cash-flow rights is likely to be reduced when investors are protected by strong, well-enforced legal institutions. However, it is also possible that the demand for accounting conservatism from outsiders is attenuated by the strong legal institutions, because the risk of expropriation by insiders is lowered. Therefore, from this aspect, whether legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism depends on which effects dominate.

Based on the above discussion, I predict that legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism. This leads to the following hypotheses:

H2a: Legal institutions strengthen the positive association between wedge and accounting conservatism, *ceteris paribus*;

H2b: Legal institutions strengthen the positive association between dispersion of cash-flow rights and accounting conservatism, *ceteris paribus*.

2.3 Research Design

2.3.1 Measuring Accounting Conservatism

There are two different ways to measure accounting conservatism. On the one hand, accounting conservatism could be measured as the timeliness of bad news recognition in earnings (losses) relative to the timeliness of good news recognition in earnings (gains) (see Bushman and Piotroski (2006) for detailed discussion). On the other hand, Basu (1997) and others measure accounting conservatism as the incremental timeliness of bad news recognition over good news recognition. Following Bushman and Piotroski (2006), I measure accounting conservatism as the timeliness of good news recognition without impacting the incremental timeliness of bad news recognition, the timeliness of incremental bad news recognition alone, or the timeliness of both good news recognition and the incremental speed of bad news recognition simultaneously[18]. I use Basu's (1997) model to capture the timeliness of good news and bad news recognition.

2.3.2 Measuring Ownership Structure

This study identifies three different dimensions of ownership structure: the largest controlling shareholder's cash-flow rights (*OWN*), the largest shareholder's wedge between control rights and cash-flow rights (*Wedge*), and dispersion of cash-flow rights between the largest shareholder and the second largest shareholder (*Dispersion*). A shareholder is defined as

[18] To see this definition clearly, let G be the speed of good news recognition and B the speed of bad news recognition, where B=G+I and I is incremental speed of bad news. Then conservatism =B/G=(G+I)/G=1+I/G. This implies that conservatism increases by increasing the incremental speed of bad news recognition holding the speed of good news recognition constant, decreasing the speed of good news recognition holding the incremental speed of bad news recognition constant, or slowing the speed of good news recognition and simultaneously increasing the speed of bad news recognition. See also Bushman and Piotroski (2006).

"large" if direct and indirect voting rights sum to 10 percent or more (La Porta et al. 1999). Following Laeven and Levine (2008), a firm is identified as widely-held if no shareholder holds 10 percent of the voting rights[19].

Prior studies indicate that immediate ownership is insufficient for describing the complex ownership structure, such as stock pyramids, cross-holdings, and dual class shares (Claessens, et al. 2000, Faccio and Lang 2002, La Porta, et al. 1999). Following these studies, I use the ultimate owner approach to define cash-flow rights and control rights of the largest two shareholders. Indirect ownership chain is traced backwards through numerous corporations to identify the ultimate controlling owners.

The control rights of the largest shareholder are calculated as the control rights of the largest shareholder with control of ten percent or more of the voting rights and zero if the corporation is widely held. The control rights of the second largest shareholder are calculated as the control rights of the second largest shareholder with control of ten percent or more of the voting rights and zero if the corporation is widely held, or if there is only one shareholder with control of ten percent or more of the voting rights. I also compute the direct and indirect cash-flow rights of the largest two shareholders. To calculate indirect cash-flow rights, I use the products of the cash-flow rights along the ownership chain. The cash-flow rights of the largest shareholder equals the cash-flow rights of the largest shareholder that has control rights of ten percent or more and zero if the corporation is widely held. The cash-flow rights of the second largest shareholder equals the cash-flow rights of the second largest shareholder that has control rights of ten percent or more and zero if the corporation is widely held, or if there is only one shareholder with control rights of ten percent or more.

I measure the wedge between control rights and cash-flow rights as the difference between control and cash-flow rights of the largest shareholder. Wedge provides information on the

[19] I get qualitatively same conclusions when applying a 20 percent criterion.

largest shareholder's ability and incentives to expropriate firm resources. Similar results are obtained when using the ratio of cash-flow to control rights instead.

To evaluate theories of the governance of firms with multiple blockholders, I compute the dispersion of cash-flow rights. Prior studies argue that ruling coalitions with large total cash-flow rights are less likely when cash-flow rights are widely distributed across large shareholders. Dispersion of cash-flow rights is computed as the difference between the cash-flow rights of the two largest shareholders. Noticeably, there are some firms (83 out of about 2,352) where dispersion of cash-flow rights is negative. This means there are a few firms in which the largest owner in terms of control rights has fewer cash-flow rights than the second largest owner. Following Laeven and Levine (2008), I simply exclude these firms from the empirical analysis[20].

2.3.3 Measuring Quality of Legal Institutions

This study applies three different proxies measuring quality of legal institutions: Shareholder rights, investor protection, and judiciary efficiency. In the empirical analysis, I classify each country-level institution into high or low realization. The specific institution's indicator variable is set equal to one if the country-level institution realization is greater than or equal to the median country-level observation, zero otherwise. The classification is an intertemporal constant in my study. The use of simple high-low institutional classification facilitates the comparison of the impacts of ownership structures on accounting conservatism among countries with different quality of legal institutions. The definitions and measurement methods of the three legal institution proxies are detailed in Appendix 2-A.

[20] The empirical results are unchanged if I include these firms in the tests.

2.3.4 Investigating the Research Questions

I modify Basu's (1997) model to empirically examine my research questions. To test **H1a** and **H1b**, I regress the following model:

$$
\begin{aligned}
NI_t = {} & a_0 + b_1 D_t + b_2 RET_t + b_3 D_t * RET_t \\
& + b_4 OWN + b_5 OWN * D_t + b_6 OWN * RET_t + b_7 OWN * D_t * RET_t \\
& + b_8 Wedge + b_9 Wedge * D_t + b_{10} Wedge * RET_t + b_{11} Wedge * D_t * RET_t \\
& + b_{12} Dispersion + b_{13} Dispersion * D_t + b_{14} Dispersion * RET_t + b_{15} Dispersion * D_t * RET_t \\
& + b_{16} MBR_t + b_{17} MBR_t * D_t + b_{18} MBR_t * RET_t + b_{19} MBR_t * D_t * RET_t \\
& + b_{20} LEV_t + b_{21} LEV_t * D_t + b_{22} LEV_t * RET_t + b_{23} LEV_t * D_t * RET_t \\
& + b_{24} SIZE_t + b_{25} SIZE_t * D_t + b_{26} SIZE_t * RET_t + b_{27} SIZE_t * D_t * RET_t \\
& + b_{24} LIT_t + b_{25} LIT_t * D_t + b_{26} LIT_t * RET_t + b_{27} LIT_t * D_t * RET_t \\
& + Country, Industry \text{ and } Year \text{ } Fixed \text{ } Effects + \xi \qquad (1)
\end{aligned}
$$

where *NI* is net income before extraordinary items (IC data 32), deflated by beginning of period prices (MVE_{t-1}). *D* is an indicator variable equals one if *RET* is less than zero, and zero otherwise. *RET* is holding period stock return, including dividends, over the firm's fiscal accounting year. I also control three firm-level control variables: firm size (*SIZE*), leverage (*LEV*), market-to-book ratio (*MBR*), and litigation risk (*LIT*). The measurement of the variables is detailed in Appendix 2-A.

To test **H2a** and **H2b**, I regress the equation (1) in two subsamples with different legal institution quality (strong and weak) and compare their coefficient differences. Hypothesis

1 predicts b_{11} to be positive or b_{10} to be negative. Hypothesis 2 predicts b_{15} to be positive or b_{14} to be negative. Hypothesis 3 predicts b_{10}, b_{11}, b_{14} and b_{15} to be more pronounced in stronger legal institutions.

2.4 Sample Selection and Descriptive Statistics

1.4.1 Sample Selection

My sample consists of listed companies from 13 countries in Western Europe: (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom). The ownership data are from Faccio and Lang (2002). Ownership for each firm is computed at some point during the period 1996-1999. As we known, ownership structure changes very slowly over time (Faccio and Lang 2002, La Porta, et al. 1999). The sample period spans from 1995 to 2004, which is close to the time the ownership data is collected.

To ensure the accuracy of the matching data, I match the ownership data of Faccio and Lang (2002) with three different popular databases containing financial data of publicly listed firms: *Global Vantage Industrial/ Commercial* (*IC*), *Worldscope*, and *Burea van Dijk* (*BvD*) *ORBI*. Stock price data is drawn from the *Datastream*, *Global Vantage Issues* files, and *Burea van Dijk* (*BvD*) *ORBIS*. Then I cross check the matching financial and stock price data from these databases. If there are any data inconsistencies among these databases, I check the officially published financial reports to decide which one to be used. Therefore, for a company in the ownership data of Faccio and Lang (2002), its financial and stock price data might come from any one of the three databases.

I exclude firm-year observations with missing values to compute dependent and independent variables. Next I delete observations for financial institutions (SIC

6000-6999). I also eliminate observations with negative dispersion of cash-flow rights. To mitigate the influence of potential outliers, I winsorize each variable (*NI*, *RET*, *MBR*, *LEV*, *SIZE*) at the 1st and 99th percentile values. The final sample consists of 13,544 observations from 13 western European countries. Table 1 describes the sample selection procedure in details.

[Insert Table 1 around here]

1.4.2 Descriptive Statistics

Table 2 summarizes the descriptive statistics by country, provides the correlation matrix among the variables used in the regressions, and reports the distribution of firms by country and ownership structure type. Panel A reports the mean values of each variable for each country sample and for the total sample. The mean, median, standard deviation, minimum value and maximum value of each variable are also reported for the total sample. As shown in the second column, the size of the country samples ranges from 208 firm-years (38 firms) for Ireland to 5,429 firm-years (919 firms) for the United Kingdom. Accounting earnings (*NI*) have positive mean values except for that of Norway (-0.2%). Consistent with the findings of prior studies, accounting earnings are negatively skewed and stock returns are positively skewed. Moreover, stock returns display greater volatility than accounting income, indicating that managers tend to smooth earnings. Corporate ownership structure shows considerable variations across countries. France has the highest

average level of cash-flow rights of the largest controlling owner (*OWN*=0.471), and Ireland has the lowest (*OWN*=0.189). Switzerland has the highest average level of wedge (*Wedge*=0.117), and Portugal has the lowest (*Wedge*=0.008). Moreover, the average level of dispersion of cash flow rights is highest in Italy (*Dispersion*=0.080) and lowest in Belgium (*Dispersion*=0.021). Leverage (*LEV*) and market-to-book ratio (*MBR*) also vary significantly across countries. The standard deviation of *LEV* (*MBR*) is 1.695 times (1.434 times) greater than the mean value for the total sample. Firm size shows relatively lower variation compared with other variables.

[Insert Table 2 around here]

Panel B of Table 2 reports the correlation matrix among the regression variables. Consistent with prior literature, accounting earnings (*NI*) are positively correlated to stock returns (*RET*). Wedge between control rights and cash-flow rights (OWN) is positively related to accounting earnings (*NI*), suggesting that firms with higher wedge are likely to report higher earnings. The largest controlling owner's cash-flow rights (OWN) is positively associated with dispersion of cash-flow rights (Dispersion) and negatively associated with wedge between control rights and cash-flow rights (Wedge). The Pearson (Spearman) correlation coefficient between OWN and Wedge is only -0.139 (-0.172), suggesting that Wedge is not simply a proxy for cash-flow rights. The Pearson (Spearman) correlation coefficient between Wedge and Dispersion is only -0.059 (0.008), suggesting that wedge and dispersion of cash-flow rights are different dimensions of ultimate ownership. In addition, firm size (*SIZE*) is negatively associated with the largest controlling owner's cash-flow rights (OWN) and positively

associated with wedge between control rights and cash-flow rights (Wedge), indicating that controlling owner of large firms are more likely to build wedge between control rights and cash-flow rights and less likely to own high percent of cash-flow rights. Moreover, firm size (*SIZE*) is negatively associated with dispersion of cash-flow rights (Dispersion). However, these results should be interpreted with cautions, as the pairwise correlations may suffer from correlated omitted variables, which are controlled for in the regression analyses.

Panel C of Table 2 reports the number of firms for each ownership type by country. In 10 out of 13 countries (except Finland, Norway, and Sweden), most of the firms are controlled by one large shareholder. In all the 13 countries, the number of firms with no controlling owner is less than that of firms with one or multiple controlling owners. In the full sample, there are 34.78 percent of firms with multiple controlling shareholders, indicating the popularity of such kind of firms. In Finland, more than half of the firms are controlled by multiple shareholders. While in Austria, only 20 percent of firms are controlled by more than one shareholder. In sum, the data reported in Panel C indicates that a great number of firms are controlled by multiple large shareholders.

2.5 Empirical Results

My multivariate tests are estimated using ordinary least squares (OLS). In all the regressions, I report robust t-statistics after correcting for firm clustered standards errors that are likely to be present in the panel data (Petersen 2009).

2.5.1 Regression results the association between ownership structure and accounting conservatism

Table 3 presents the regression coefficients and the corresponding t-statistics from estimating equation (1) in full sample and the sample of firms with multiple controlling owners.

As shown in Table 3, the coefficients on *D*RET (b3)* are significant in both regressions, indicating the existence of accounting conservatism in both samples. In both regressions, the coefficients on *Wedge*RET* (b_{10}) are significantly negative, while those on *Wedge*D*RET* (b_{11}) are insignificant (one positive while the other negative). This indicates that, firms with higher wedge show lower timeliness of good news recognition, consistent with the explanation that outsiders worry about insiders favorably biasing the accounting numbers and demand lower timeliness of good news recognition. However, I find no evidence that firms with higher wedge have significantly higher incremental timeliness of bad news recognition. In sum, the result indicates that wedge is positively associated with accounting conservatism (lower timeliness of good news recognition holding incremental timeliness of bad news

recognition constant), supporting my first hypothesis **H1a**.

In both regressions, the coefficients on *Dispersion*RET* (b_{14}) are significantly negative, and those on *Dispersion*D*RET* (b_{15}) are significantly positive. In regression (1) (regression (2)), the coefficient on *Dispersion*RET* (b_{14}) is -0.097 (-0.071), while the coefficient on *RET* (b_2) is 0.035 (0.023). This means that a 1% increase of dispersion of cash flow rights could lead to about 2.77% (3.24%) decrease of timeliness of good news recognition in regression (1) (regression (2)). Therefore, the association between dispersion of cash flow rights and timeliness of good news recognition is not only statistically but also economically significant. This is consistent with the explanation that outsiders concern with the insiders' behavior of favorably biasing the accounting numbers and hence demand insiders to recognize good news less timely. In regression (1) (regression (2)), the coefficient on *Dispersion*D*RET* (b_{15}) is 0.298 (0.520), while the coefficient on *D*RET* (b_3) is 0.482 (0.610). This means that a 1% increase of dispersion of cash flow rights could lead to about 0.62% (0.85%) decrease of incremental timeliness of bad news recognition in regression one (two). Therefore, the association between dispersion of cash flow rights and incremental timeliness of bad news recognition is not only statistically but also economically significant. This finding is consistent with firms with more agency problem demand higher incremental timeliness of bad news recognition. Overall, the empirical results suggest that dispersion of cash-flow rights is positively associated with accounting conservatism, consistent with my second hypothesis **H1b**.

Moreover, the coefficients on *OWN*RET* (b_6) are significantly positive in regression (1), and those on *OWN*D*RET* (b_7) are significantly negative in both regressions. This indicates that, firms with higher cash-flow rights recognize good news more timely and have lower incremental timeliness of bad news recognition, consistent with the alignment effects of cash-flow rights documented by prior studies (Claessens, et al. 2002). The coefficients on the control variables are generally consistent with extant literature. Both market-to-book (*MBR*) ratio and firm size (*SIZE*) are negatively associated with accounting conservatism, and leverage (*LEV*) is positively associated with accounting conservatism. However, the effects of litigation risk on accounting conservatism are mixed and insignificant, probably because its effects are subsumed by other factors or the measurement of litigation risk is noisy in an international setting.

In sum, the empirical results in Table 3 provide evidences consistent with my first two hypotheses (**H1a** and **H1b**) and imply that both wedge and dispersion of cash-flow rights are positively associated with the use of accounting conservatism.

[Insert Table 3 around here]

2.5.2 Regression results on the effects of legal institutions

Table 4 provides the empirical analysis for **H2a** and **H2b**. I regress equation (1) in the subsamples of strong and weak legal institutions. Column (1) reports results of regressing equation (1) in subsample of strong legal institutions, while column (2)

reports those in subsample of weak legal institutions. Column (3) reports the t-statistics of the coefficient difference between regression (1) and (2). Panel A presents the by-group regression results setting legal institutions to shareholder rights, Panel B presents results setting legal institutions to investor protection, and Panel C presents results setting legal institutions to judiciary efficiency.

As we can see from Table 4, the coefficients on *D*RET* (b_3) are more pronounced in strong legal institutions. The coefficient differences of b_3 between strong and weak legal institutions are significantly positive in all the three panels, consistent with Bushman and Piotroski (2006). In all the three regressions, the coefficients on *Wedge* RET* (b_{10}) are significantly negative in the sample of strong legal institutions and insignificantly negative in the sample of weak legal institutions. This means the negative associations between wedge and the timeliness of good news recognition documented in 5.1 only exist in strong legal institutions, indicating that legal institutions strengthen the positive association between wedge and accounting conservatism. Although the coefficients on *Wedge*D*RET* (b_{11}) are insignificant in all the six regressions, in two out of three Panels (except Panel B), the coefficient differences of *Wedge*D*RET* (b_{11}) are significantly positive, indicating that b_{11} is more pronounced in strong legal institutions, consistent with the view that the positive association between wedge and accounting conservatism is more pronounced in stronger legal institutions. Overall, the regression results suggest that legal institutions strengthen the positive association between wedge and accounting conservatism, consistent with **H2a**.

The coefficients on *Dispersion* RET* (b_{14}) are significantly negative in two out of three regressions in the strong-legal sample and insignificantly negative in all the regressions of the weak-legal sample. This means the negative associations between dispersion and the timeliness and good news recognition documented in 5.1 generally exist in strong legal institutions. The coefficients on *Dispersion* D*RET* (b_{15}) are significantly positive in all the regressions of strong-legal sample and insignificantly in all the regressions of the weak-legal sample. This indicates that the positive associations between dispersion and the incremental timeliness and bad news recognition documented in 5.1 generally exist in strong legal institutions. Moreover, in all the three Panels, the coefficient differences of *Dispersion*D*RET* (b_{15}) are significantly positive, indicating that b_{15} is more pronounced in strong legal institutions. In sum, the regression results suggest that legal institutions strengthen the positive association between dispersion and accounting conservatism, consistent with **H2b**.

[Insert Table 4 around here]

2.6 Robustness Checks

2.6.1 Reestimation using Ball & Shivakumar (2006) Model

An important concern is that the Basu's (1997) Model applied in the empirical tests may be greatly affected by the different extent of market efficiency in different countries. To assuage this concern, I borrow the model from Ball and Shivakumar (2005, 2006) to examine the asymmetric timeliness of earnings without reference to security prices. Specifically, I present estimations of the following model:

$$\begin{aligned} ACCRUALS = {} & c_0 + c_1 * N + c_2 CFO + c_3 N * CFO \\ & + c_4 OWN + c_5 OWN * N + c_6 OWN * CFO + c_7 OWN * N * CFO \\ & + c_8 Wedge + c_9 Wedge * N + c_{10} Wedge * CFO + c_{11} Wedge * N * CFO \\ & + c_{12} Dispersion + c_{13} Dispersion * N + c_{14} Dispersion * CFO + c_{15} Dispersion * N * CFO \\ & + c_{16} FASSET + c_{17} FASSET * N + c_{18} FASSET * CFO + c_{19} FASSET * N * CFO \\ & + c_{20} \Delta SALES_t + c_{21} \Delta SALES_t * N + c_{22} \Delta SALES_t * CFO_t + c_{23} \Delta SALES_t * N * CFO_t \\ & + Country, Industry, and Year\ Fixed\ Effects + \xi \end{aligned} \quad (2)$$

where *ACCRUALS* is current period accruals, *CFO* is current period operating cash flows, and *N* is an indicator variable equals one if *CFO* is negative, zero otherwise. Since Hribar and Collins (2002) argue that current (working capital) accruals are biased when estimated from changes in balance sheet data, I use the *CFO* data directly from cash flow statement in this paper.

In Panel A, the coefficients on *Wedge*N*CFO* and *Dispersion*N*CFO* are

significantly positive, supporting the hypothesis that wedge and dispersion of cash-flow rights are positively associated with accounting conservatism. Panel B, C and D report that the positive coefficients on *Wedge*N*CFO* and *Dispersion*N*CFO* only exist in strong legal institutions, consistent with the view that legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism. Overall, the results reported in Table 5 are similar to those in Table 3, and Table 4, further strengthen the validity of my conclusions.

[Insert Table 5 around here]

2.6.2 Reestimation using three-year Basu (1997) specification

Roychowdhury and Watts (2007) argue that the beginning composition of equity value affects asymmetric timeliness measured over short horizons. Specifically, past timeliness of earnings with respect to returns influences future earnings timeliness over short periods, which might affect the results of Basu's (1997) model. To mitigate the concern that one-year Baus's (1997) model might lead to biased results, I reexamine my research questions using earnings and return over longer periods, specifically, over the following three years.

$$NI_{t\text{-}3,t}=d_0+d_1D_{t\text{-}3,t}+d_2RET_{t\text{-}3,t}+d_3D_{t\text{-}3,t}*RET_{t\text{-}3,t}$$
$$+d_4OWN+d_5OWN*D_{t\text{-}3,t}+d_6OWN*RET_{t\text{-}3,t}+d_7OWN*D_{t\text{-}3,t}*RET_{t\text{-}3,t}$$
$$+d_4Wedge+d_5Wedge*D_{t\text{-}3,t}+d_6Wedge*RET_{t\text{-}3,t}+d_7Wedge*D_{t\text{-}3,t}*RET_{t\text{-}3,t}$$
$$+d_4Dispersion+d_5Dispersion*D_{t\text{-}3,t}+d_6Dispersion*RET_{t\text{-}3,t}$$

$$+d_7 Dispersion*D_{t-3,t}*RET_{t-3,t}+Control\ Variables$$

$$+Country,\ Industry,\ and\ Year\ Fixed\ Effects+\xi \quad (4)$$

where *NI* is equal to the sum of net income before extraordinary items over the estimation period divided by beginning of estimation period market value of equity. *RET* is equal to the market-adjusted buy-and-hold return over the estimation period. $D_{t-3,t}$ is equal to one if $RET_{t-3,t}$ is negative, zero otherwise. $D_{t-3,t}$ is equal to one if $RET_{t-3,t}$ is negative, zero otherwise.

As we can see from Table 6, the coefficients on *Wedge*D*RET* and *Dispersion*D*RET* are all significantly positive, consistent with H1a and H1b. Moreover, in Panel B, C, and D, we can see that the positive association between wedge/dispersion of cash-flow rights and accounting conservatism generally exist in strong legal institutions, consistent with H2a and H2b. In sum, the results reported in Table 6 are similar to my main results.

[Insert Table 6 around here]

2.6.3 Using firm-level accounting conservatism measure

Basu's (1997) return model has several economic and econometric problems (Dietrich, et al. 2007, Givoly, et al. 2007). To assuage the concern that my estimation on accounting conservatism is noisy, I use the methodology proposed by Khan and Watts (2007) to calculate firm-level accounting conservatism measure – C_score.

Then I reexamine all the research questions using C_score as the dependent variable, and the empirical results remain qualitatively unchanged.

2.6.4 Other robustness checks

I also conduct a number of other robustness checks. Firstly, I construct several different measures of ownership structures. I use divergence rather than wedge to proxy the detachment of control rights from cash-flow rights. Specifically, divergence is defined as 1 minus the cash flow rights divided by the voting rights, consistent with Haw et al. (2004) and Fan and Wong (2002). Moreover, I use two different measures to proxy dispersion of cash flow rights. The first one is calculated as one minus the second largest shareholder's cash-flow rights divided by the largest shareholder's cash-flow rights. The second one is computed as the cash-flow-right difference of the two largest shareholders divided by the sum of the cash-flow rights of them. The results using the alternative ownership structure measurements (untabulated) are similar to those reported in Table 3 and Table 4. Secondly, to accommodate the potential nonlinear relation, I transform OWN, Wedge, and Dispersion into a fractional rank variables, and reestimate all the regressions. The results remain qualitatively unchanged. Third, as the sample size varies across countries, I apply weighted least squares (WLS) procedures, placing an equal weight on each country sample. The untabulated results are similar to those reported in Table 3, and Table 4. In sum, the sensitivity tests reveal that my results appear robust. Fourth, I test for the

possible endogenous selection of wedge and dispersion of cash-flow rights. To control for possible endogenous effects, I use a two-stage model in which wedge and dispersion of cash-flow rights is replaced with a predicted value. I estimate a first-stage model of wedge and dispersion of cash-flow rights as a function of firm size, prior period performance, growth, leverage, and R&D investment. The results of the two-stage framework are consistent with my main results.

2.7 Conclusions

In this paper, I examine the association between ownership structure and accounting conservatism as well as how legal institutions influence this association. Using a comprehensive, firm-level ownership dataset for thirteen Western European countries to conduct the empirical analysis, I have the following empirical findings. First, both wedge and dispersion of cash-flow rights are positively associated with accounting conservatism. Second, legal institutions strengthen the positive association between wedge/dispersion of cash-flow rights and accounting conservatism.

This study contributes to the literature in a number of ways. Firstly, it adds to the growing body of literature on the role of accounting conservatism in mitigating agency problems. The existing literature document that accounting conservatism helps mitigate the manager-shareholder and debtholder-shareholder conflicts, while this study stresses the role of accounting conservatism in assuaging another kind of agency problem: interest conflicts between majority shareholders and outsiders (both minority shareholders and debtholders).

Secondly, this study highlights the importance of the second largest controlling shareholder in affecting the level of accounting conservatism. Previous studies on accounting consequence of ultimate ownership generally neglect the influences from controlling shareholders other than the largest shareholder. Prior finance and economics literature reveals that multiple large owners could either cross-monitor or build coalition and affect the firm's agency costs and valuation, suggesting that it is important to take into account the effects of multiple large shareholders (Bennedsen and Wolfenzon 2000,

Bloch and Hege 2001, Laeven and Levine 2008, Pagano and Roell 1998). To my knowledge, this study is the first to investigate the effects of multiple large shareholders on accounting conservatism.

Thirdly, this essay reinforces the important role played by legal institutions in influencing the installation of firm-level corporate governance mechanisms. The findings of this paper are consistent with the argument that legal institutions are important in determining the costs and benefits of launching firm-level governance mechanisms.

Finally, the findings of this study have important implications for accounting standard setters attempting to eliminate conservatism in financial reports. My finding that accounting conservatism increases in response to increases in interest conflicts between minority shareholders and insiders implies that accounting conservatism is a useful tool to assuage agency problems. This finding reminds standard setters to take caution when they attempt to eliminate accounting conservatism.

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Appendix 2-A Variable Definitions

Variable	Definition
Country Variables	
SRIGHTS	This index of Shareholder rights is formed by adding one when: (1) the country allows shareholders to mail their proxy vote; (2) shareholders are not required to deposit their shares prior to the General Shareholders= Meeting; (3) cumulative voting or proportional representation of minorities on the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders= Meeting is less than or equal to ten percent (the sample median); or (6) when shareholders have preemptive rights that can only be waved by a shareholders meeting. The range for the index is from zero to six. Source: La Porta et al. (1998).
JUDEFF	Assessment of the efficiency and integrity of the legal environment as it affects business, particularly foreign firms produced by the country risk rating agency International Country Risk (ICR). It may be taken to represent investors' assessment of conditions in the country in question. Scale from 0 to 10, with lower scores representing lower efficiency levels. Source: International Country Risk Guide.
$INVPRO_t$	Index of investor protection, constructed as the principal component of disclosure, liability standards, and anti-director rights. Scale is from 0 to 10. This data is available from La Porta et al. (2006).
Firm Variables	
RET	Holding period stock return, including dividends, over the firm's fiscal accounting year. This data is drawn from *Datastream*, *Standard and Poor*'s *Global Vantage Issues* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
MVE	Market value of equity at the end of a given fiscal year, defined as number of shares outstanding times closing price available for the last month of the fiscal year. This data is gathered from *Datastream*, *Standard and Poor*'s *Global Vantage Issues* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
NI	Net income before extraordinary items (IC data 32), deflated by beginning of period prices (MVE_{t-1}). This data is drawn from *Worldscope*, *Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
D	An indicator variable equals one if *RET* is less than zero; zero otherwise.
OWN	The cash-flow rights of the largest shareholder that has control of ten percent or more of the voting rights. It equals zero if the corporation is widely held. This data is collected from (Faccio and Lang 2002).

Wedge	Wedge between control rights and cash-flow rights equals the control rights of the largest shareholder minus the cash-flow rights of the largest shareholder. This data is collected from (Faccio and Lang 2002).
Dispersion	Dispersion of cash-flow rights equals the difference between the cash-flow rights of the two largest shareholders. This variable equals zero when the firm does not have two shareholders with at least ten percent of the voting rights. The cash-flow rights of the second largest shareholder equal cash-flow rights of the second largest shareholder that has the control of ten percentage or more of the voting rights and zero if the corporation if widely held, or if there is only one shareholder with control of ten percent or more of the voting rights. This data is collected from (Faccio and Lang 2002).
CFO	Operating cash flow, deflated by beginning of period prices (MVE_{t-1}). This data is drawn from *Worldscope*, *Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
ACCRUALS	Total accruals, deflated by the average total assets, defined as Net income before extraordinary items minus cash flow from operating activities, scaled by the average total assets. This data is drawn from *Worldscope, Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
N	An indicator variable equals one if CFO_t is less than zero; zero otherwise.
LEV	Leverage is the total debt deflated by the market capitalization. This data is drawn from *Worldscope, Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
SIZE	Firm size is the natural logarithm of the total assets (in millions of U.S. dollars) at the end of fiscal year t. This data is drawn from *Worldscope, Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
MBR	Market-to-book ratio is the market value of equity divided by the book value of equity. This data is drawn from *Worldscope, Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
LIT	*LIT* is coded one if a firm is in a litigious industry - SIC codes 2833–2836, 3570– 3577, 3600–3674, 5200–5961, and 7370 - and zero otherwise. This data is drawn from *Worldscope, Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.
FASSET	Book value of fixed assets scaled by the average total assets. This data is drawn from *Worldscope, Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.

ΔSALES	Change in sales scaled by the average total assets. This data is drawn from *Worldscope*, *Standard and Poor*'s *Global Vantage Industrial /Commercial* files, or *Bureau van Dijk* (*Bvd*) *ORBIS*.

TABLE 1 Sample Selection

Sample-Selection Process	Obs. Removed	Obs. Remaining
Initial sample from 1995 to 2003 available from *Datastream*/*Worldscope, Compustat Global Vantage,* or *Bureau van Dijk* (*Bvd*) *ORBIS* for the 13 Western European economies		60,862
After eliminating firms with missing values of dependent and independent variables	(37,575)	23,287
After eliminating financial institutions (SIC 6000-6999)	(291)	22,996
Final sample that merges the data on the two largest controlling owners' voting and cash flow rights and the financial data obtained in the previous step	(89,40)	14,056
After eliminating firms with negative dispersion of cash-flow rights	(512)	13,544

Notes: This table presents the sample selection process and data requirements for the regressions. The final sample for these regressions consists of listed companies from 13 Western European economies (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom).

Table 2 Summary statistics and correlations

Panel A: Country-level descriptive statistics											
Country	Obs	No. of firms	NI	RET	OWN	Wedge	Dispersion	MBR	LEV	SIZE	LIT
Austria	400	61	0.039	-0.016	0.463	0.056	0.040	1.564	1.078	12.629	0.063
Belgium	332	48	0.048	-0.041	0.321	0.038	0.021	1.836	0.758	13.024	0.145
Finland	445	85	0.061	0.014	0.295	0.032	0.070	2.062	0.687	12.185	0.090
France	1942	314	0.014	-0.034	0.471	0.007	0.074	1.826	0.887	12.629	0.149
Germany	2264	343	0.019	-0.012	0.455	0.043	0.070	2.704	0.802	12.566	0.117
Ireland	208	38	0.017	0.497	0.189	0.018	0.057	2.762	0.526	12.254	0.135
Italy	428	67	0.024	0.140	0.417	0.088	0.080	2.164	0.846	13.178	0.124
Norway	379	82	-0.002	0.159	0.261	0.053	0.054	1.806	1.300	12.427	0.106
Portugal	180	40	0.024	0.013	0.408	0.008	0.061	2.104	1.150	12.002	0.022
Spain	581	91	0.066	0.062	0.299	0.019	0.074	2.068	0.589	13.133	0.062
Sweden	479	103	0.035	0.122	0.231	0.053	0.054	2.185	0.766	12.833	0.109
Switzerland	477	73	0.041	0.472	0.291	0.117	0.039	2.155	0.844	12.711	0.184
UK	5429	919	0.016	0.073	0.197	0.018	0.048	2.605	0.455	11.808	0.153
	13544	2264									
Mean			0.023	0.062	0.314	0.031	0.058	2.348	0.685	12.314	0.133
Median			0.060	0.000	0.250	0.000	0.000	1.521	0.304	12.145	0.000
Std.			0.213	0.596	0.256	0.075	0.127	3.368	1.161	1.842	0.340
Min			-1.227	-0.993	0.000	-0.209	0.000	-6.358	0.000	8.519	0.000
Max			0.506	3.279	1.000	0.685	0.805	23.101	7.645	17.349	1.000

Panel B: Pearson (above the diagonal) and Spearman rank (below the diagonal) correlations

Variable	*NI*	*RET*	*Own*	*Wedge*	*Dispersion*	*MBR*	*LEV*	*SIZE*	*LIT*
NI	1	0.170	-0.002	0.026	-0.005	0.022	-0.324	0.126	-0.007
		(<0.001)	(0.837)	(0.002)	(0.560)	(0.009)	(<0.001)	(<0.001)	(0.398)
RET	0.314	1	-0.042	0.083	-0.016	0.168	-0.131	0.034	0.040
	(<0.001)		(<0.001)	(<0.001)	(0.059)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Own	-0.032	-0.038	1	-0.139	0.287	-0.006	0.060	-0.074	0.002
	(<0.001)	(<0.001)		(<0.001)	(<0.001)	(0.514)	(<0.001)	(<0.001)	(0.796)
Wedge	0.027	0.045	-0.172	1	-0.059	-0.017	0.032	0.088	0.018
	(0.002)	(<0.001)	(<0.001)		(<0.001)	(0.042)	(<0.001)	(<0.001)	(0.034)
Dispersion	-0.009	-0.009	0.160	0.008	1	0.002	0.019	-0.034	-0.012
	(0.287)	(0.318)	(<0.001)	(0.335)		(0.807)	(0.290)	(<0.001)	(0.165)
MBR	-0.025	0.227	-0.049	-0.035	-0.021	1	-0.186	-0.002	0.037
	(0.004)	(<0.001)	(<0.001)	(<0.001)	(0.013)		(<0.001)	(0.811)	(<0.001)
LEV	-0.102	-0.187	0.058	0.071	0.018	-0.438	1	0.081	-0.054
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.038)	(<0.001)		(<0.001)	(<0.001)
SIZE	0.101	0.059	-0.075	0.134	-0.054	0.085	0.215	1	-0.008
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)		(0.365)
LIT	-0.038	0.018	0.003	0.010	-0.028	0.062	-0.082	-0.013	1
	(<0.001)	(0.038)	(0.763)	(0.252)	(0.001)	(<0.001)	(<0.001)	(0.124)	

Panel C: Number of firms by country and ownership type							
Country	Firms with no controlling owner		Firms with one controlling owner		Firms with multiple controlling owners		Total
Austria	16	(4.00%)	303	(75.75%)	81	(20.25%)	400
Belgium	18	(5.42%)	241	(72.59%)	73	(21.99%)	332
Finland	60	(13.48%)	156	(35.06%)	229	(51.46%)	445
France	98	(5.05%)	1222	(62.92%)	622	(32.03%)	1942
Germany	110	(4.86%)	1339	(59.14%)	815	(36.00%)	2264
Ireland	57	(27.40%)	88	(42.31%)	63	(30.29%)	208
Italy	1	(0.23%)	275	(64.25%)	152	(35.51%)	428
Norway	24	(6.33%)	167	(44.06%)	188	(49.60%)	379
Portugal	1	(0.56%)	119	(66.11%)	60	(33.33%)	180
Spain	48	(8.26%)	299	(51.46%)	234	(40.28%)	581
Sweden	26	(5.43%)	220	(45.93%)	233	(48.64%)	479
Switzerland	38	(7.97%)	320	(67.09%)	119	(24.95%)	477
UK	1176	(21.66%)	2412	(44.43%)	1841	(33.91%)	5429
Total	1673	(12.35%)	7161	(52.87%)	4710	(34.78%)	13544

This table reports summary statistics and correlations for the sample. Panel A of this table presents the country-level summary statistics for the research variables. The mean values of each variable are calculated and reported for each sample country. The last five rows report the cross-country mean, median, standard deviation, minimum value and maximum value. Panel B of this table presents correlation matrix of firm-level variables for 13,544 observations over the 1995-2003 period. P-values (in parenthetic) are two-sided. See Appendix 2-A for variable definitions. Panel C of this table reports the number of firms (with percentage of country-totals between brackets) for each ownership type by country.

Table 3 Ownership structures and accounting conservatism

Variable	Sign	(1) Full Sample		(2) Multiple Blockholders	
		coefficient	t-statistics	coefficient	t-statistics
RET	+	0.035	1.161	0.023	0.461
D*RET	+	0.482	5.890***	0.610	3.641***
OWN*RET	+	0.033	1.751*	-0.006	-0.062
OWN*D*RET	-	-0.214	-4.593***	-0.415	-1.850*
Wedge*RET	-	-0.092	-2.527**	-0.164	-2.126**
Wedge*D*RET	+	-0.121	-0.899	0.206	0.675
Dispersion*RET	-	-0.097	-2.097**	-0.071	-1.739*
Dispersion*D*RET	+	0.298	2.998***	0.520	2.368**
MBR*RET	+	-0.001	-1.947*	-0.000	-0.0559
MBR*D*RET	-	-0.006	-1.319	-0.009	-1.165
LEV*RET	-	-0.013	-1.437	-0.013	-0.701
LEV*D*RET	+	0.073	4.029***	0.087	3.006***
SIZE*RET	+	-0.001	-0.305	0.000	0.0822
SIZE*D*RET	-	-0.029	-4.908***	-0.038	-3.229***
LIT*RET	-	-0.003	-0.276	0.020	0.921
LIT*D*RET	+	0.015	0.468	-0.032	-0.571
D		-0.039	-1.143	-0.035	-0.528
OWN		-0.014	-1.213	0.037	0.662
OWN*D		-0.008	-0.424	-0.013	-0.159
Wedge		0.039	1.499	0.066	1.313
Wedge*D		-0.028	-0.607	-0.007	-0.0839
Dispersion		0.032	1.319	-0.026	-0.439
Dispersion*D		0.041	1.106	0.069	0.789
MBR		-0.003	-2.641***	-0.003	-2.086**
MBR*D		-0.001	-0.649	-0.003	-0.762
LEV		-0.034	-4.382***	-0.045	-3.253***
LEV*D		-0.009	-0.822	0.004	0.228
SIZE		0.010	6.126***	0.008	2.889***
SIZE*D		0.002	0.977	0.001	0.294
LIT		-0.032	-2.216**	-0.021	-0.927
LIT*D		0.009	0.723	-0.004	-0.165
Constant		0.009	0.370	0.026	0.551
Observations		13544	13544	4712	4712
Adj. R-squared		0.218	0.218	0.242	0.242

This table presents the regression coefficients and the corresponding t-statistics from estimating equation (1). Variable definitions are detailed in Appendix 2-A. Regression (1) includes all the observations in the full sample, while regression (2) only includes firms with multiple controlling owners. This table presents robust (clustered) t-statistics (*** p<0.01, ** p<0.05, * p<0.1).

Table 4 Effects of legal institutions on the association between ownership structures and accounting conservatism

Panel A: Legal institution=Shareholder rights

Variable	Sign	(1) Strong Shareholder Rights		(2) Weak Shareholder Rights		Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
RET	+	0.035	0.941	0.040	0.694	0.160
D*RET	+	0.583	4.596***	0.206	1.823*	2.411**
OWN*RET	+	-0.014	-0.561	0.078	2.758***	-2.565**
OWN*D*RET	-	-0.198	-2.472**	-0.097	-1.609	-0.730
Wedge*RET	-	-0.089	-2.049**	-0.111	-1.592	0.210
Wedge*D*RET	+	0.298	1.366	-0.196	-1.207	1.662*
Dispersion*RET	-	-0.098	-1.582	-0.048	-0.820	-0.523
Dispersion*D*RET	+	0.459	2.487**	0.145	1.335	1.720*
MBR*RET	+	-0.001	-1.602	-0.000	-0.178	-0.714
MBR*D*RET	-	-0.008	-1.120	-0.004	-0.655	-0.445
LEV*RET	-	-0.009	-0.890	-0.021	-0.904	0.654
LEV*D*RET	+	0.047	1.902*	0.096	3.017***	-1.450
SIZE*RET	+	-0.000	-0.159	-0.001	-0.321	-0.113
SIZE*D*RET	-	-0.034	-3.429***	-0.015	-1.979**	-1.495
LIT*RET	-	0.004	0.348	-0.022	-1.092	1.261
LIT*D*RET	+	0.026	0.585	0.012	0.266	0.159
D		-0.030	-0.638	-0.037	-0.684	0.441
OWN		0.019	1.132	-0.014	-0.840	1.671*
OWN*D		-0.045	-1.568	0.023	0.891	-1.902*
Wedge		0.053	1.504	0.036	0.838	0.244
Wedge*D		-0.093	-1.410	0.073	1.066	-1.594
Dispersion		-0.002	-0.0696	0.028	0.905	-0.664
Dispersion*D		0.106	1.824*	0.016	0.344	1.345
MBR		-0.001	-0.785	-0.007	-3.914***	2.496**
MBR*D		-0.003	-1.018	0.002	0.740	-1.159
LEV		-0.039	-3.357***	-0.029	-2.657***	-0.846
LEV*D		-0.020	-1.262	-0.002	-0.107	-0.849
SIZE		0.008	3.993***	0.013	5.040***	-0.570
SIZE*D		0.003	0.936	0.000	0.0153	0.279
LIT		-0.050	-2.827***	-0.011	-0.456	-1.004
LIT*D		0.015	0.912	0.001	0.0606	0.441
Constant		0.031	1.035	-0.096	-2.612***	
Observations		7941	7941	5603	5603	
Adj. R-squared		0.243	0.243	0.229	0.229	

Panel B: Legal institution=Investor Protection

Variable	Sign	(1) Strong Investor Protection		(2) Weak Investor Protection		Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
RET	+	0.094	2.165**	-0.058	-1.305	2.921***
D*RET	+	0.474	4.369***	0.318	2.474**	0.489
OWN*RET	+	-0.002	-0.0789	0.064	2.248**	-1.904*
OWN*D*RET	-	-0.198	-2.947***	-0.105	-1.493	-1.813*
Wedge*RET	-	-0.180	-2.086**	-0.038	-0.933	-1.498
Wedge*D*RET	+	-0.069	-0.202	0.056	0.390	-0.292
Dispersion*RET	-	-0.122	-1.801*	-0.012	-0.229	-1.120
Dispersion*D*RET	+	0.339	2.490**	0.050	0.151	2.223**
MBR*RET	+	-0.002	-2.345**	-0.001	-0.384	-0.840
MBR*D*RET	-	-0.013	-1.927*	-0.000	-0.0361	-1.524
LEV*RET	-	-0.021	-1.172	-0.010	-1.350	-0.557
LEV*D*RET	+	0.084	3.243***	0.064	2.393**	0.578
SIZE*RET	+	-0.004	-1.370	0.005	1.613	-2.548**
SIZE*D*RET	-	-0.028	-3.333***	-0.022	-2.583***	-0.120
LIT*RET	-	0.002	0.0865	-0.011	-0.822	0.687
LIT*D*RET	+	0.010	0.201	0.039	1.008	-0.484
D		-0.007	-0.148	-0.114	-2.100**	1.468
OWN		0.032	1.925*	-0.041	-2.148**	3.389***
OWN*D		-0.043	-1.740*	0.050	1.692*	-2.444**
Wedge		0.131	2.136**	-0.014	-0.451	2.064**
Wedge*D		-0.108	-1.015	0.072	1.367	-1.366
Dispersion		0.012	0.365	0.011	0.315	-0.111
Dispersion*D		0.030	0.597	0.068	1.395	-0.448
MBR		-0.001	-1.030	-0.007	-3.664***	2.206**
MBR*D		-0.004	-1.288	0.002	0.683	-1.344
LEV		-0.035	-3.258***	-0.026	-2.594***	-0.264
LEV*D		-0.018	-1.267	-0.002	-0.136	-0.865
SIZE		0.012	5.951***	0.005	1.914*	2.829***
SIZE*D		0.002	0.470	0.005	1.234	-0.590
LIT		-0.057	-2.829***	-0.010	-0.417	-0.00558
LIT*D		0.006	0.324	0.026	1.355	-0.802
Constant		-0.081	-2.772***	0.070	1.794*	
Observations		9164	9164	4380	4380	
Adj. R-squared		0.244	0.244	0.227	0.227	

Panel C: Legal institution=Judiciary Efficiency

Variable	Sign	(1) Strong Judiciary Efficiency		(2) Weak Judiciary Efficiency		(3) Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
RET	+	0.080	1.949*	-0.039	-0.723	2.349**
D*RET	+	0.519	4.882***	0.199	1.481	1.669*
OWN*RET	+	0.003	0.109	0.058	1.791*	-1.696*
OWN*D*RET	-	-0.211	-3.195***	-0.045	-0.625	-2.324**
Wedge*RET	-	-0.161	-2.126**	-0.054	-1.224	-0.651
Wedge*D*RET	+	0.107	0.953	-0.105	-0.754	2.158**
Dispersion*RET	-	-0.111	-1.680*	-0.033	-0.586	-0.707
Dispersion*D*RET	+	0.334	2.492**	0.036	0.314	1.871*
MBR*RET	+	-0.002	-2.035**	-0.001	-0.562	-0.374
MBR*D*RET	-	-0.013	-2.053**	0.000	0.0738	-1.716*
LEV*RET	-	-0.019	-1.057	-0.012	-1.531	-0.352
LEV*D*RET	+	0.082	3.234***	0.066	2.364**	0.382
SIZE*RET	+	-0.003	-1.200	0.004	1.060	-2.117**
SIZE*D*RET	-	-0.031	-3.793***	-0.015	-1.728*	-0.940
LIT*RET	-	-0.007	-0.400	-0.005	-0.321	0.108
LIT*D*RET	+	0.018	0.389	0.038	0.957	-0.344
D		-0.002	-0.0443	-0.126	-2.231**	1.752*
OWN		0.027	1.689*	-0.034	-1.710*	3.066***
OWN*D		-0.043	-1.764*	0.057	1.854*	-2.583***
Wedge		0.089	1.697*	0.009	0.279	1.224
Wedge*D		-0.093	-1.010	0.069	1.301	-1.270
Dispersion		0.014	0.435	0.012	0.343	-0.102
Dispersion*D		0.038	0.758	0.049	0.979	-0.139
MBR		-0.001	-1.165	-0.007	-3.330***	1.983**
MBR*D		-0.004	-1.264	0.002	0.522	-1.239
LEV		-0.037	-3.568***	-0.023	-2.083**	-0.578
LEV*D		-0.016	-1.186	-0.004	-0.226	-0.742
SIZE		0.012	6.066***	0.005	1.694*	2.911***
SIZE*D		0.001	0.317	0.005	1.419	-0.902
LIT		-0.055	-2.747***	-0.003	-0.123	-0.0340
LIT*D		0.003	0.156	0.031	1.561	-1.103
Constant		-0.025	-0.850	0.057	1.421	2.376**
Observations		9643	9643	3901	3901	
Adj. R-squared		0.246	0.246	0.220	0.220	

This table presents the regression results of estimating equation (1) separately in subsamples of strong and weak legal institutions. Regression (1) regresses equation (1) in subsample of strong legal institutions, while regression (2) in subsample of weak legal institutions. Column (3) reports the t-statistics of the

coefficient difference between regression (1) and (2). This table presents robust (clustered) t-statistics (*** p<0.01, ** p<0.05, * p<0.1).

Table 5 Sensitivity Test - Reestimation using Ball & Shivakumar (2006) Model
Panel A: Ownership structures and accounting conservatism

Variable	Sign	(1) Full Sample		(2) Multiple Blockholders	
		coefficient	t-statistics	coefficient	t-statistics
CFO	-	-0.649	-28.78***	-0.621	-14.62***
N*CFO	+	0.776	8.055***	0.771	4.050***
OWN*N*CFO	-	-0.257	-1.572	-0.370	-0.568
Wedge*N*CFO	+	-1.326	-2.065**	-0.515	-0.556
Dispersion*N*CFO	+	-0.354	-0.976	-0.148	-0.205
Constant	?	0.020	3.548***	0.023	2.044**
Observations		11603	11603	4376	4376
Adj. R-squared		0.332	0.332	0.329	0.329

Panel B: Legal institution=Shareholder rights

Variable	Sign	(1) Strong Shareholder Rights		(2) Weak Shareholder Rights		Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
CFO	-	-0.615	-24.68***	-0.864	-17.83***	3.959***
N*CFO	+	0.805	7.402***	-0.042	-0.219	3.885***
OWN*N*CFO	-	-0.223	-2.149**	0.239	0.992	-2.874***
Wedge*N*CFO	+	2.161	1.979*	0.483	0.769	1.873*
Dispersion*N*CFO	+	0.754	2.268**	0.546	0.848	1.778**
Constant	?	0.030	3.867***	0.026	3.586***	0.612
Observations		8971	8971	2632	2632	
Adj. R-squared		0.282	0.282	0.613	0.613	

Panel C: Legal institution=Investor Protection

Variable	Sign	(1) Strong Shareholder Rights		(2) Weak Shareholder Rights		Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
CFO	-	-0.621	-24.30***	-0.809	-17.25***	3.156***
N*CFO	+	0.789	6.908***	0.775	3.753***	0.314
OWN*N*CFO	-	-0.706	-3.048***	-0.436	-1.939*	-2.217**
Wedge*N*CFO	+	2.280	2.180**	-1.145	-1.574	2.906***
Dispersion*N*CFO	+	0.704	2.443**	0.265	0.765	1.619*
Constant	?	0.016	1.050	0.028	3.965***	-3.112***
Observations		8560	8560	3043	3043	
Adj. R-squared		0.285	0.285	0.551	0.551	

Panel D: Legal institution=Judiciary Efficiency

Variable	Sign	(1) Strong Shareholder Rights		(2) Weak Shareholder Rights		Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
CFO	-	-0.476	-20.95***	-0.994	-27.63***	1.823*
N*CFO	+	0.664	5.743***	0.521	4.090***	1.892*
OWN*N*CFO	-	0.148	0.645	-0.314	-1.900*	1.207
Wedge*N*CFO	+	0.089	0.045	-0.676	-1.295	-0.820
Dispersion*N*CFO	+	1.094	2.096**	0.597	1.097	1.535
Constant	?	0.009	1.357	0.024	2.051**	-2.612***
Observations		8010	8010	3593	3593	
Adj. R-squared		0.235	0.235	0.636	0.636	

This table presents the regression results of reestimating equation (2) using Ball & Shivakumar (2006) Model. Panel A reports the empirical results of the association between ownership structure and accounting conservatism. Panel B, C, D reports regressions results on how legal institutions affect the association between ownership structure and accounting conservatism. Panel A set legal institutions equal to shareholder rights, Panel B investor protection, and Panel C judiciary efficiency. For brevity, I only report the coefficients for the items important to my research questions, and the coefficients of other variables are omitted in the tables. This table presents robust (clustered) t-statistics (*** p<0.01, ** p<0.05, * p<0.1).

Table 6 Sensitivity Test - Reestimation using three-year Basu (1997) specification

Panel A: Ownership structures and accounting conservatism

Variable	Sign	(1) Full Sample		(2) Multiple Blockholders	
		coefficient	t-statistics	coefficient	t-statistics
RET	+	-0.014	-0.488	-0.015	-0.315
D*RET	+	0.596	7.832***	0.766***	5.147***
OWN*RET	+	0.032	2.235**	0.303***	3.383***
OWN*D*RET	-	-0.184	-4.717***	-0.231	-1.193
Wedge*RET	-	-0.039	-1.593	-0.110	-1.633
Wedge*D*RET	+	0.063	2.413**	0.044	1.974*
Dispersion*RET	-	-0.018	0.634	-0.327***	-4.125***
Dispersion*D*RET	+	0.168	2.196**	0.147	1.745*
Constant	?	0.104	3.193***	0.096	1.609
Observations		12081	12081	4454	4454
Adj. R-squared		0.124	0.124	0.143	0.143

Panel B: Legal institution=Shareholder rights

Variable	Sign	(1) Strong Shareholder Rights		(2) Weak Shareholder Rights		Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
RET	+	-0.018	-0.483	0.001	0.038	-0.136
D*RET	+	0.622	6.475***	0.069	0.711	3.136***
OWN*RET	+	0.074	2.388**	0.009	0.894	3.920***
OWN*D*RET	-	-0.108	-1.756*	0.004	0.093	-2.279**
Wedge*RET	-	-0.060	-0.592	-0.025	-1.476	-1.192
Wedge*D*RET	+	0.907	2.430***	0.068	0.812	1.986*
Dispersion*RET	-	0.071	1.368	0.018	0.962	1.316
Dispersion*D*RET	+	0.331	3.284***	0.046	0.506	2.342**
Constant		0.052	1.014	0.103	2.076**	-3.294***
Observations		8787	8787	3294	3294	
Adj. R-squared		0.150	0.150	0.156	0.156	

Panel C: Legal institution=Investor Protection

Variable	Sign	(1) Strong Shareholder Rights		(2) Weak Shareholder Rights		Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
RET	+	-0.044	-1.093	0.045	1.155	-1.407
D*RET	+	0.635	6.510***	0.056	0.552	3.957***
OWN*RET	+	0.068	2.155**	-0.027	-1.759*	3.370***
OWN*D*RET	-	-0.107	-1.728*	-0.011	-0.241	-1.278
Wedge*RET	-	-0.061	-0.569	-0.035	-1.636	-0.160
Wedge*D*RET	+	0.562	1.829*	0.006	0.0717	1.695*
Dispersion*RET	-	0.071	1.322	0.024	1.194	1.147
Dispersion*D*RET	+	0.330	2.276**	0.002	0.035	1.720*
Constant		0.044	0.857	0.144	2.847***	-3.477***
Observations		8425	8425	3656	3656	
Adj. R-squared		-0.044	-1.093	0.127	0.127	

Panel D: Legal institution=Judiciary Efficiency

Variable	Sign	(1) Strong Shareholder Rights		(2) Weak Shareholder Rights		Difference (1)-(2)
		coefficient	t-statistics	coefficient	t-statistics	t-statistics
RET	+	-0.011	-0.310	0.071	1.661*	-1.367
D*RET	+	0.675	6.009***	0.156	1.726*	3.784***
OWN*RET	+	0.059	2.559**	-0.006	-0.372	3.062**
OWN*D*RET	-	-0.123	-1.800*	-0.050	-1.125	-0.555
Wedge*RET	-	-0.040	-2.133**	-0.012	-0.317	-1.705*
Wedge*D*RET	+	0.175	1.721*	-0.122	-1.104	1.968*
Dispersion*RET	-	0.002	0.060	0.085	1.786*	-1.097
Dispersion*D*RET	+	0.276	2.020**	0.007	0.092	1.887*
Constant		0.041	0.922	-0.005	-0.110	1.238
Observations		7456	7456	4625	4625	
Adj. R-squared		0.164	0.164	0.091	0.091	

This table presents the regression results of reestimating equation (3) using three-year Basu (1997) specification. Panel A reports the empirical results of the association between ownership structure and accounting conservatism. Panel B, C, D reports regressions results on how legal institutions affect the association between ownership structure and accounting conservatism. Panel A set legal institutions equal to shareholder rights, Panel B investor protection, and Panel C judiciary efficiency. For brevity, I only report the coefficients for the items important to my research questions, and the coefficients of other variables are omitted in the tables. This table presents robust (clustered) t-statistics (*** p<0.01, ** p<0.05, * p<0.1).